

**STATE OF NEW HAMPSHIRE  
SITE EVALUATION COMMITTEE  
DOCKET NO. 2008-02**

**APPLICATION OF TENNESSEE GAS PIPELINE COMPANY**

**DECISION ISSUING CERTIFICATE OF SITE AND FACILITY  
WITH CONDITIONS  
MARCH 12, 2009**

**Appearances:** Donald J. Pfundstein, Esq., of Gallagher, Callahan & Gartrell for the Applicant, Tennessee Gas Pipeline Company; Peter C.L. Roth, Esq., Senior Assistant Attorney General, Counsel for the Public.

**TABLE OF CONTENTS**

<b>I.</b>	<b>INTRODUCTION.....</b>	<b>2</b>
<b>II.</b>	<b>THE APPLICATION.....</b>	<b>3</b>
<b>III.</b>	<b>SUMMARY OF THE REGULATORY PROCESS AND PARTICIPATION.....</b>	<b>4</b>
	<b>A. Completeness of Application.....</b>	<b>4</b>
	<b>B. Appointment of Public Counsel.....</b>	<b>5</b>
	<b>C. Intervention.....</b>	<b>5</b>
	<b>D. Hearings.....</b>	<b>6</b>
	<b>E. Public Comment.....</b>	<b>8</b>
<b>IV.</b>	<b>POSITIONS OF THE PARTIES.....</b>	<b>9</b>
<b>V.</b>	<b>ANALYSIS AND FINDINGS.....</b>	<b>11</b>
	<b>A. State Permits.....</b>	<b>11</b>
	<b>B. Consideration of Available Alternatives.....</b>	<b>12</b>
	<b>C. Statutory Criteria.....</b>	<b>14</b>
	<b>1. Financial, Technical and Managerial Capability.....</b>	<b>14</b>
	<b>2. Orderly Development of the Region.....</b>	<b>15</b>
	<b>3. Adverse Impacts.....</b>	<b>17</b>
	<b>a. Aesthetics.....</b>	<b>17</b>
	<b>b. Historic Sites.....</b>	<b>18</b>
	<b>c. Air Quality.....</b>	<b>18</b>
	<b>d. Water Quality.....</b>	<b>20</b>
	<b>e. Natural Environment.....</b>	<b>21</b>
	<b>f. Public Health and Safety.....</b>	<b>24</b>
	<b>i. Natural Gas Safety.....</b>	<b>24</b>
	<b>ii. Spills.....</b>	<b>25</b>
	<b>iii. Noise Issues.....</b>	<b>26</b>
	<b>4. Consistency with State Energy Policy.....</b>	<b>30</b>
<b>VI.</b>	<b>CONCLUSION.....</b>	<b>31</b>
	<b>Attachment A (Certificate of Site and Facility).....</b>	<b>32</b>

**I. INTRODUCTION.** On April 22, 2008, the Tennessee Gas Pipeline Company (TGP or Applicant) filed an Application for a Certificate of Site and Facility for the “Concord Lateral Expansion Project” (Application). The Concord Lateral Expansion Project (Project) is designed to implement an agreement that will allow TGP to provide incremental gas capacity to Energy North Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England (Energy North) in order to provide incremental capacity to the region. TGP has operated its lateral system in New Hampshire since the early 1950’s and transports natural gas from Dracut, Massachusetts, into the Southern New Hampshire region. TGP provides transportation service for Energy North to delivery points in New Hampshire. The lateral system was originally constructed in 1951 and has been upgraded periodically thereafter. In order to accomplish the objectives of the project, TGP seeks authority to construct and operate a new 6,130 horsepower compression station on its line 200 system (also known as the Concord Lateral System or Lateral) in Pelham, New Hampshire. In addition, TGP seeks to upgrade its existing “Laconia Meter Station” (Meter Station) in Concord, New Hampshire with piping modifications to accommodate additional capacity. (The proposed compressor station in Pelham and the proposed upgrade to the meter station in Concord are sometimes referred to herein as the Facility.) TGP asserts that the Project will allow TGP to provide an incremental 30,000 dekatherms per day of capacity to Energy North. TGP seeks to complete the Project and have it be in service by November 1, 2009.

The construction and operation of the Project constitutes the construction and operation of an energy facility as that term is defined by RSA 162-H: 2, VII. Therefore, TGP must obtain a Certificate of Site and Facility from the New Hampshire Site Evaluation Committee (Committee).

**II. THE APPLICATION.** TGP seeks a Certificate in order to construct and operate a new compressor station on the Concord Lateral pipeline system which is also known as the line 200 system. Construction and operation of the compressor station is designed to permit TGP to provide an incremental 30,000 dekatherms per day capacity pursuant to an agreement that it has entered with Energy North. The Facility to be constructed at the site of the Project in Pelham, New Hampshire consists of a gas fueled 6,130 horsepower turbine driven compressor unit. The compressor unit will be housed in a new compressor building to be built at the Pelham site. In addition, the Application seeks authority to construct associated facilities at the Pelham site, including the compressor building which is a 40' x 65' building with a 45' high roof line. The Application also seeks authority to construct and operate turbine exhaust stacks at 55 feet in height, and to construct an auxiliary building to house an emergency generator, air compressor, water heater and domestic fuel gasket. The Application also seeks authority to construct and operate a control building, a radio communications tower, a gas discharge cooler, filter separator, and a blowdown silencer. The Application also seeks authority to construct an access road to the Facility in Pelham.

The location of the proposed Project in Pelham is an 11 acre parcel which does not presently have a street address but is located on the Pelham Tax Map, Parcel Lot 1-5-111.

The Application also seeks authority to undertake construction at TGP's existing meter station at 17 Broken Bridge Road, in Concord, New Hampshire. The construction that will take place at the Concord portion of the Project consists of piping modifications. The metering station in Concord currently has two measuring facilities. The facilities will be modified by replacing 4" and 6" pipe with 12" pipe in order to accommodate the increased capacity that will be generated by the new compressor station in Pelham, New Hampshire. Also, at the Meter

Station, TGP intends to reconnect station piping that will permit TGP's line 270B-100 to tie over with TGP's line to 273C-100. In tying the two lines together, TGP hopes to insure continued service in the event of an outage on either of the lines. The Application does not seek the construction of new buildings or other facilities at the Concord portion of the Project. The Meter Station is an existing structure located within a fenced area in Concord and occupies approximately .5 acres.

### **III. SUMMARY OF THE REGULATORY PROCESS AND PARTICIPATION.**

**A. Completeness of the Application.** As indicated above, the Application for Certificate of Site and Facility was filed on April 22, 2008. A copy of the Application was provided to each state agency having jurisdiction, permitting or licensing authority over the matters raised in the Application. On May 9, 2008, the state agencies were advised of the pendency of the Application and asked to advise the Committee as to whether or not the Application contained sufficient information for the purposes of exercising each agency's jurisdiction. Counsel sent similar letters to the Selectmen of the Town of Pelham, New Hampshire, the City of Concord, New Hampshire, the Greater Nashua Regional Planning Commission and the Central New Hampshire Regional Planning Commission on May 13, 2008. On May 16, 2008, the Committee received correspondence from the Air Resources Division of the Department of Environmental Services. The Air Resources Division reported that the Application contained sufficient information for the exercise of its jurisdiction over the required air permit.

On May 23, 2008, the Committee received correspondence from the Water Division of the Department of Environmental Services advising that the Application contained sufficient information for the exercise of jurisdiction over the issuance of an on-site waste water permit.

On May 23, 2008, the Water Division of the Department of Environmental Services also advised the Committee that the Application contained sufficient information for the exercise of jurisdiction over the issuance of an alteration of terrain permit. The Regional Planning Commissions, the City of Concord, and the Town of Pelham did not provide any input with respect to the completeness of the Application.

On June 16, 2008, the Committee held a hearing for the purpose of reviewing the Application in order to determine if it contained sufficient information for the Committee to carry out the purposes of RSA 162-H. The Committee determined that the Application was complete and did contain sufficient information for the Committee to carry out the statutory purpose.

**B. Appointment of Public Counsel Pursuant to RSA 162-H: 9.** The Attorney General appointed Senior Assistant Attorney General, Peter C.L. Roth as Counsel for the Public. Counsel for the Public represents the interests of the public in seeking to protect the quality of the environment and in seeking to assure an adequate supply of energy for the state. Counsel for the Public has been accorded all of the rights, privileges and responsibilities of an attorney representing a party in these proceedings. Counsel for the Public has participated in this matter in representing the public's interest at site inspection visits, public information hearings, prehearing conferences, and informal technical sessions and in the adjudicative process. On December 11, 2008, Counsel for the Public filed a memorandum addressing his position with respect to the issuance of a Certificate of Site and Facility.

**C. Intervention.** On May 23, 2008, the Committee issued an Order and Notice of Public Meeting. The Order and Notice was appropriately published. The Notice advised that any person wishing to appear as a party must file a Motion to Intervene on or before June 16, 2008. On June

25, 2008, the Committee issued an Order and Notice of Public Information Hearing, Site Inspection Visits and Prehearing Conference. The Notice invited public comment and questions to be taken at public hearings to be held in Pelham, New Hampshire and Concord, New Hampshire on July 17, 2008. The Notice also advised of a prehearing conference to be held on July 11, 2008, and further extended the deadline for the filing of Motions to Intervene until July 14, 2008. No formal requests to intervene have been received by the Committee. On July 15, 2008, the Committee received a letter from Elizabeth and Jason Matthews identifying themselves as members of the "Mammoth Road Neighborhood Alliance." The letter did not contain a return address and did not appear to identify all of the members of the "Mammoth Road Neighborhood Alliance." Elizabeth Matthews subsequently did appear at the public information hearing in Pelham on July 17, 2008, and did provide contact information to Counsel for the Committee. Counsel for the Committee engaged in correspondence with Ms. Matthews via e-mail and advised her of the rules of the Committee and how to file a formal request to intervene as a party in the proceedings. Although Ms. Matthews requested information on how to review the entire Application, neither she nor any other person representing the Mammoth Road Neighborhood Alliance followed through and filed a formal petition to intervene. Ms. Matthews was put on the service list for this docket. She was advised of informal technical sessions that occurred and of the adjudicative hearing which was held on December 1, 2008. Nonetheless, Ms. Matthews did not participate beyond making a public statement at the public information hearings on July 17, 2008. No other parties sought to intervene in this matter.

**D. Hearings.** A number of public hearings were held in this docket. As indicated above, a hearing on the completeness of the application was held on June 16, 2008. On July 17, 2008, the Committee visited the sites in both Concord and Pelham. On July 17, 2008, the Committee also

conducted public informational hearings and heard public comment. An adjudicative proceeding was held on December 1, 2008. The Committee also met in public session to deliberate on the merits of granting or denying a Certificate of Site and Facility on February 10, 2009. All of the foregoing hearings were duly noticed to all parties and interested persons, state agencies, and municipalities. All of the foregoing hearings were noticed to the public via appropriate publication in newspapers with general circulation in the state of New Hampshire and specific circulation within Hillsborough and Merrimack Counties.

In addition to the foregoing hearings, informal technical sessions were held on October 8, 2008 and October 28, 2008. All parties received notice of the informal technical sessions. In addition, e-mail notice was provided to persons who identified themselves as interested parties. TGP appeared at each technical session with employees and consultants with knowledge about all aspects the proposed facility.

On December 1, 2008, the Committee held an adjudicative hearing. At this hearing TGP presented four witnesses, Michael Stokdyk, Project Manager Business Development, David Jones, Senior Project Engineer for HFP Acoustical Consultants, Thomas Fillip, Project Engineer and John Zimmer, an environmental consultant. TGP also admitted a number of exhibits pertaining to all aspects of the Application and the statutory criteria that the Committee must apply to the Application.

Counsel for the Public did not present witnesses but did present nineteen exhibits, most of which concerned the issue of operational noise that might be emitted from the compressor station in Pelham. At the hearing Counsel for the Public argued for an operational noise condition that would limit operational noise from the proposed compressor facility to a maximum sound level of 50 dBA  $L_{dn}$  at the nearest sound receptors. TGP opposed the proposed

condition and argued that the maximum sound level of 55dBA  $L_{dn}$ , as ordered by the Federal Energy Regulatory Commission (FERC), was appropriate. TGP and Counsel for the Public each filed post-hearing memoranda in furtherance of their respective positions.

**E. Public Comment.** During the course of the proceedings the Committee received both written and oral public comment. The Committee received two written comments from the public during the pendency of the proceedings.

On June 23, 2008, the Committee received a letter from Carol Desrosiers of Windham. In her letter Ms. Desrosiers advised the Committee that neither she nor a neighbor had received prior notice of the FERC proceedings. Ms. Desrosiers also advised the Committee that the Town of Pelham's industrial zone area bordered the residential zone areas in Windham and Hudson. Ms. Desrosier's letter also addressed the noise impacts that would be caused by the proposed Facility and asked that TGP be required to take operational measures to reduce noise from the compressor station.

On July 25, 2008, the Committee received a letter from Elizabeth Matthews writing on behalf of the Mammoth Road Neighborhood Alliance. Ms. Matthews identified eight areas of concern:

1. Lack of notice from TGP regarding previous public forums.
2. Failure to timely notify some abutters.
3. Public safety in the area of Mammoth Road concerning an efficient evacuation plan.
4. Ground contamination due to rusting and/or corroding pipes.
5. Noise Pollution.
6. Effects on property values.
7. Beaver Brook conservation.
8. Town of Pelham Bylaws for the industrial park area.

No other written comment was received by the Committee.



The Public Informational Hearing held in Concord on July 17, 2008 did not draw any comments from the public. However, several members of the public did address the Committee at the Public Hearing held in Pelham on July 17, 2008. Mr. Peter McNamara, Chairman of the Pelham Board of Selectman spoke and thanked the Committee for its diligence. Mr. McNamara also asked that any Certificate issued include reasonable testing of both noise level and air emissions. The Pelham Planning Director, Mr. Gowan, also spoke at the public hearing and expressed his confidence in the Committee. Kevin Hebert of Windham spoke to express his concern about the potential noise levels from the project. David Anderson of Windham, President of the Whispering Winds Condominium Association, advised the Committee that the closest existing residences were senior citizen complexes, including Whispering Winds. He then read from a prepared statement strongly objecting to the project and expressing concern about noise pollution, air pollution and aesthetic pollution. Mr. Anderson's written statement was admitted into the record. Betsy Matthews of Windham also spoke at the public hearing. Ms. Matthews expressed her concerns that TGP had failed to notify abutters of public forums regarding the project and her concerns about the effect of the project on local property values. She also submitted, as part of the record, a nine page document identifying pipeline accidents and expressed concern about evacuation plans.

#### **IV. POSITION OF THE PARTIES**

Only TGP and Counsel for the Public participated in the adjudicative phase of the proceedings.

After extensive review of the filings and engaging in detailed technical sessions, Counsel for the Public concluded that he would support the Application with a more restrictive noise

condition than that set by FERC. *See*, Transcript, December 1, 2008, p. 19 – 25. The specific noise condition espoused by Counsel for the Public stated:

A. The facility shall be constructed and continuously maintained, in accordance with the specifications provided by TGP in the letter by David Jones, HFP, and filed with the Committee as Public Counsel Ex. 7-16, and which incorporates certain provisions in the letters of David Jones, HFP dated June 9, 2008 and October 22, 2008, Public Counsel Ex. 5 and 6 respectively, and including such additional acoustical lagging and walls or barriers that may be necessary to achieve 46-48 dB(A)  $L_{dn}$ . TGP shall make all reasonable efforts to ensure that its predicted noise levels from the facility are not exceeded at the NSAs (as such NSAs as they are described in the Resource Report No. 9, Public Counsel Ex. 1), and file noise surveys with the Committee no later than 60 days after placing the facility in service.

B. If the noise attributable to the operation of the facility at full loads exceeds 50 dB(A)  $L_{dn}$  at any nearby NSAs, TGP shall file a report on what changes are needed and shall install additional noise controls to meet the level within no more than 1 year of the in-service date. TGP shall confirm compliance with these requirements by filing a second noise survey with the Committee no later than 60 days after it installs the additional noise controls.

C. TGP shall supply copies of any submissions to FERC required by its Order Issuing Certificate (Aug. 28, 2008), or any subsequently issued FERC order, to Committee and Counsel for the Public, within no more than 30 days of filing or submitting such to FERC.

D. The Committee shall retain jurisdiction and Counsel for the Public shall remain appointed for the purpose of enforcing any conditions to the Certificate of Site and Facility.

*See*, Counsel for the Public's Memorandum of Law, December 11, 2008, p. 1-2.

TGP opposed Counsel for the Public's proposed condition and submitted its own:

1) That Applicant shall design and construct the compressor station subject to the Application in the above-captioned matter (hereinafter the "Station") in substantial conformity with those parameters contained in Section 4, "Station Sound Level Treatment Summary" in the attached Report of HFP Acoustical Consultants, Inc., dated November 6, 2008.

2) That Applicant shall construct, operate and maintain the Station so that it remains in full compliance with applicable FERC sound level regulations.

*See*, Exhibit J (Applicant's proposed noise condition). TGP also argued that in all other respects the Application and the record of the proceedings supported the issuance of a Certificate of Site and Facility for the project.

No issues other than the appropriate noise condition were in controversy at the adjudicative proceeding.

## **V. ANALYSIS AND FINDINGS**

### **A. State Permits**

The construction and operation of the proposed facility implicates three state permits. The facility requires a Temporary Air Permit from the Air Resources Division (ARD) of the Department of Environmental Services (DES) pursuant to RSA 125-C, a Terrain Alteration Permit from the Water Division of DES pursuant to RSA 485-B, and a Subsurface Septic System Permit from the Water Division pursuant to RSA 485-A. The Committee received approvals for each required permit from DES. The permits and the conditions attached to the permits are discussed in greater detail below.

The conditions of each permit shall become conditions of the Certificate of Site and Facility in this docket. Pursuant to RSA 162-H:4, III, the Committee hereby delegates the authority to monitor the construction and operation of the facility as it pertains to air quality, water quality and the subsurface septic system to DES. The Committee further delegates to DES the authority to specify the use of any technique, methodology, practice or procedure pertaining to the permits pursuant to RSA 162-H: 4, III-a. This delegation of authority includes the

authority to require or allow minor modifications to the specifications and conditions contained in the permits.

## **B. Consideration of Available Alternatives**

TGP reports that it has extensively considered alternatives to the project as contained in the Application. The Application reveals that TGP has considered site alternatives, route alternatives and operational alternatives. *See*, Applicant Exhibit A (Application, Section 7.1 through 7.1.9.) TGP reports that the primary objective of its alternatives analysis was to locate the compressor station in a manner that will avoid or minimize the potential adverse environmental effects to the greatest extent practicable. TGP also reports that it attempted to minimize the disruption to nearby residential communities with respect to traffic and land-use impacts. TGP reports that it evaluated siting options based on various criteria including topography, environmental impacts, existing land-use, property costs, construction safety and feasibility considerations, and engineering and technical parameters. TGP also reports that its alternative siting analysis is in accordance with the objectives of existing FERC regulations. *Id.*

TGP considered two other sites for construction of the proposed project. The first alternative site is located in Windham New Hampshire. The Windham site is owned by TGP and is environmentally optimal for the project. However, the Windham site is not large enough to accommodate the proposed project. Additionally, the Windham site is closer to local residences than the site proposed in the Application. *See*, Applicant Exhibit A (Application, p. 20.)

TGP also consider a site located off of Nashua Road in Londonderry, New Hampshire. While this site is large enough to contain the compressor station and contains favorable

topography it is located in a portion of the Town of Londonderry that is zoned for commercial use. The acquisition cost of the property with its current zoning would have rendered the project financially non-viable. *See*, Applicant Exhibit A (Application p. 20.)

In addition to other sites, TGP reports that it considered operational alternatives to the project. These alternatives consisted of pipeline looping instead of compression and combinations of pipeline looping and compression. The term “pipeline looping” refers to placing additional segments of pipeline parallel to and connected to the existing pipeline. These segments act to reduce the rate of pressure drop in the pipe due to friction, and thereby increase the throughput capacity of the pipeline. Both of these operational alternatives would result in significantly greater potential impacts to wetlands, water bodies, wildlife and landowners as compared to the proposed Project. *See*, Applicant Exhibit A (Application, p. 17 – 18); Applicant Exhibit B (Pre-filed Testimony of Michael Stokdyk, p. 7.)

TGP also considered a "no action alternative". The “no action alternative” was not feasible because it might shift the burden of providing necessary capacity to other carriers and limit the ability of TGP to service its increased customer base. The “no action alternative” might also lead to energy shortages in times of peak demand that may increase consumption of fossil fuels including oil and coal. *See*, Applicant Exhibit A (Application p. 16); Applicant Exhibit B (Pre-filed Testimony of Michael Stokdyk, p. 6 - 7.)

Counsel for the Public did not raise any objections or concerns with respect to TGP’s analysis of alternatives.

The Committee finds that TGP has provided an adequate analysis of available alternatives and that the proposed Project is the alternative that best serves the objectives of RSA 162-H.

### **C. Statutory Criteria**

#### **1. Applicant's Financial, Technical and Managerial Capability**

TGP is a natural gas transmission company engaged in the business of storing and transporting natural gas in interstate commerce under authorization granted by and subject to jurisdiction of the Federal Energy Regulatory Commission (FERC). TGP operates and maintains approximately 14,700 miles of pipeline within the United States. TGP maintains approximately 1.4 million horsepower of compression the United States. TGP has constructed and operated natural gas facilities in New Hampshire for more than 50 years. TGP constructed the Concord Lateral in 1951 and has upgraded that system during the 1980s, the early 1990s, and in 2001. TGP intends to supervise and monitor the construction of the project in accordance with all applicable laws, rules, regulations, permits, certificates and standards. *See*, Applicant Exhibit A (Application, p. 2.)

FERC regulates the rates that TGP may charge its customers pursuant to natural gas transmission and storage contracts. FERC regulation generally allows TGP to charge rates that cover its cost of providing service and a reasonable rate of return. Operating in this regulated environment, TGP has a steady history of stable revenues. *See*, Applicant Exhibit A (Application, Appendix C.) In 2007, TGP reported revenue of \$862 million and net income of \$153 million. *Id.* The estimated cost of the Project is \$20 million. *See*, Applicant Exhibit B

(Pre-filed testimony of Michael Stokdyk, p. 5.) TGP asserts that the project will be financed from cash on hand, internally generated funds, revolving credit agreements and/or short term financing that will be rolled into a permanent financing package. *Id.*

TGP has demonstrated that it has adequate financial, technical and managerial experience to assure construction and operation of the facility in accordance with the terms and conditions of a Certificate of Site and Facility. *See*, RSA 162-H:16, IV (a).

## **2. Orderly Development of the Region.**

The Committee finds that TGP asserts that the proposed project will not unduly interfere with the orderly development of the region because it will increase the availability of natural gas, which is widely recognized as a desirable replacement for coal and fuel oil because of its cleaner burning characteristics. The additional gas supply will result in direct benefits to the region in future growth developments and at the least cost to New Hampshire consumers. TGP further asserts that the project will only impose a minimal impact to the environment, without imposing any significant burden upon municipal support services. TGP also claims that the planning and construction of the Project is consistent with local and regional zoning and development planning. *See*, Applicant Exhibit A (Application, p. 3).

TGP also claims that it has given due consideration to the views of municipal and regional planning commissions and municipal governing bodies. Prior to filing the Application TGP reports that it met with the Pelham Town Administrator, two Selectmen, Senator Michael Downing and Representative Jean-Guy Bergeron on December 18, 2007, to explain the project and answer questions that the officials might have. Minutes of that meeting are included in the

Application. *See*, Applicant Exhibit A (Application, Appendix I.) Similarly TGP met with the Windham Town Administrator on January 22, 2007, *see*, Applicant Exhibit A (Application, Appendix I), and with officials from the City of Concord on January 31, 2007. *See*, Applicant Exhibit A (Application, p. 3).

TGP also reports that the various municipal governing bodies and planning commissions were provided the opportunity to participate in the FERC proceedings.

As indicated above, the Town of Pelham, the City of Concord, and the Central New Hampshire Regional Planning Commission and the Nashua Regional Planning Commission were all invited to participate in this docket. None chose to intervene, although the Chairman of the Pelham Board of Selectman and the Pelham Planning Director both spoke at the Informational Hearing held in Pelham on July 17, 2008. Each expressed a high degree of comfort that the Committee would act diligently in its review of this Application.

Neither the municipalities nor the planning commissions chose to further participate in the proceedings. Neither the municipalities nor the regional planning commissions advised that the project would unduly interfere with the orderly development of the region. There is no other evidence in the record that suggests that the construction and operation of the proposed facility will unduly interfere with the orderly development of the region. The Committee finds the proposed project will not unduly interfere with the orderly development of the region.



### **3. Adverse Impacts**

#### **a. Aesthetics**

Consideration of the impact of the project on aesthetics must necessarily be bifurcated between the Concord and Pelham sites. The upgrades proposed for the Laconia Meter Station in Concord will occur in an existing fenced-in facility and at the conclusion of construction there will be no appreciable visual change in the facility. The Concord facility is situated a fair distance from any residential neighborhood and is not commonly visible to the general public. The Committee finds that the Concord portion of the project does not create any unreasonable adverse effect on aesthetics.

The Pelham portion of the project raises different concerns. The proposed compressor station is proposed to be located in a wooded area approximately six hundred feet from a residential neighborhood. Transcript, December 1, 2008, p. 46. TGP asserts that the visual effect is not likely to be significant because the project is located within an existing industrial park and the residential neighborhood is located across Beaver Brook to the north. TGP represents that the trees along Beaver Brook will be preserved to the extent practicable to provide visual and sound buffers to the residential development. TGP also represents that the exterior lighting at the compressor station will be as non-intrusive as practicable to minimize illumination of the night sky. Additionally, TGP asserts that the land necessary for the construction of the compressor station is 4.2 acres for operation of the facility (including the access road) and 2.6 acres of temporary workspace. TGP represents that this leaves 4.8 acres to be used as a noise buffer and visual screen both during and after construction. The 4.8 acre buffer zone will not be affected by

the construction or operation of the facility. *See*, Applicant Exhibit C (Pre-filed Testimony of Charles Malcolm, p. 3-4)<sup>1</sup>.

While judging aesthetic effect under these circumstances is necessarily a subjective process, the Committee finds that the compressor station as proposed with the significant buffer zone and non-intrusive exterior lighting will not have an unreasonable adverse effect on aesthetics.

**b. Historic Sites**

There is no dispute about the fact that the Project will not have unreasonable adverse effect on historic sites. On July 11, 2008, the Committee received correspondence from the New Hampshire Division of Historical Resources (DHR). That correspondence advised the Committee that all archaeological and architectural surveys were complete and that no further studies were required. The correspondence also advised that DHR concurred in the conclusion that no historic resources would be affected by the project. *See*, Applicant Exhibit N. Therefore, the Committee finds that the project as proposed in the Application and subject to terms and conditions in the Certificate of Site and Facility will not have an unreasonable adverse effect on historic sites.

**c. Air Quality**

As part of the certifying process, TGP filed a comprehensive Application for a Temporary Permit with the Air Resources Division (ARD) of the New Hampshire Department of

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<sup>1</sup> The Pre-filed Testimony of Charles Malcolm was adopted by Michael Filip. However, for convenience, this testimony shall be referred to as the Pre-filed testimony of Charles Malcolm.

Environmental Services (DES). *See*, Applicant Exhibit A (Application, Appendix E.) TGP requested permitting for the proposed compressor turbine, a new natural gas fired low NOx Solar Centaur rated at 6,130 horsepower, and a natural gas fired emergency generator rated at 425 horsepower. During the course of air permitting, an air quality impact analysis was submitted and reviewed by ARD. ARD's review of the application and the impact analysis resulted in a finding that the facility is a true minor source of air pollution and will be able to comply with all regulations. On August 15, 2008, ARD issued its Final Decision issuing a Temporary Permit for the compressor station in Pelham. *See*, Applicant Exhibit K. No portion of TGP's application for an air permit or the ARD's granting of said permit was disputed by Counsel for the Public or any other person.

In light of the review conducted by ARD, the Committee finds that the project as proposed by the Application and permitted by ARD will not have an unreasonable adverse effect on air quality so long as TGP abides by all of the terms and conditions of ARD's Temporary Permit. The Temporary Permit and its terms and conditions shall become a part of the Certificate of Site and Facility. Pursuant to RSA 162-H:4, III, the Committee hereby delegates the authority to monitor the construction and operation of the facility as it pertains to air quality and compliance with the Temporary Permit to ARD. The Committee further delegates to ARD the authority to specify the use of any technique, methodology, practice or procedure pertaining to air quality and the Temporary Permit pursuant to RSA 162-H: 4, III-a. This delegation of authority includes the authority to require or allow minor modifications to the specifications and conditions contained in the Temporary Permit.

#### **d. Water Quality**

During the course of these proceedings there have been no dispute or concerns raised about the effect of the project on water quality. The Project does not implicate shoreland protected under the comprehensive Shoreland Protection Act, RSA 483-B. Importantly, the project will not impact any wetlands or watercourses. Thus, the project does not require: a permit from the United States Army Corps of Engineers under Section 404 of the federal Clean Water Act; a water quality certificate from DES pursuant to Section 401 of the Clean Water Act; or a Wetland Permit under RSA 482-A. *See*, Applicant Exhibit A (Application, Appendix E, Wetland Delineation Report – 2008, p. 8). There are no private wells located within 250 feet of the workspaces at either the Pelham or Concord locations and the project is not located over any primary, principal or sole source aquifer as mapped by the United States Environmental Protection Agency. *See*, Applicant Exhibit C (Pre-filed testimony of Charles Malcolm, p. 7).

TGP, as part of the certificating process, has filed for and obtained approval from DES for the construction of a subsurface septic system. The Subsurface Permit and the terms and conditions thereof shall be part of the Certificate of Site and Facility. TGP shall adhere to the terms and conditions of the Subsurface Permit.

The DES Water Division has also recommended approval of TGP's request for an Alteration of Terrain Permit under RSA 485-A subject to certain conditions. The Alteration of Terrain permit is hereby approved and shall become a part of the Certificate of Site and Facility. TGP shall abide by all of the terms and conditions set forth by the Water Division.

In order to demonstrate that the project will not have an unreasonable adverse effect on water quality TGP has submitted the following:

1. FERC Upland Erosion Control Revegetation and Maintenance Plan
2. FERC Wetland and Waterbody Construction and Mitigation Procedures
3. FERC Spill Prevention Control and Countermeasures Plan
4. FERC Waste Management Plan
5. Stormwater Management report

*See*, Applicant Exhibit A (Application, Appendices E & G.) TGP represents that these plans and procedures will assure that the project does not have an unreasonable adverse effect on water quality in Pelham or in Concord. The foregoing plans and procedures shall become a part of the Certificate of Site and Facility. TGP shall follow all of the terms and procedures set forth in said plans, procedures and reports.

Pursuant to RSA 162-H:4, III, the Committee hereby delegates the authority to monitor the construction and operation of the facility as it pertains to water quality compliance with the Alteration of Terrain Permit, Subsurface Septic Approval and foregoing plans, procedures and reports to the Water Division of DES. The Committee further delegates to the Water Division the authority to specify the use of any technique, methodology, practice or procedure pertaining to water quality and the permits pertaining to water quality, pursuant to RSA 162-H: 4, III-a. This delegation of authority includes the authority to require or allow minor modifications to the specifications and conditions contained in the permits.

**e. Natural Environment**

TGP asserts that there will be "minimal adverse effects" to various natural resources. TGP has submitted a detailed analysis of the potential environmental impacts in Appendix F. to the Application. *See* Applicant Exhibit A. (Application, Appendix F.) In Appendix F, TGP

reports that the Pelham site where the compressor station will be constructed is situated on very deep and well drained soils. Although a portion of the site will be cleared of vegetation and graded, blasting is not expected. In Appendix F, TGP further asserts that appropriate erosion controls will be used at the Concord site and that both sites will be consistent with the FERC plan for the restoration of uplands. *See*, Applicant Exhibit A (Application, Appendix G.) TGP asserts that there are no wetland, drinking water or aquifer impacts that will occur as a result of the construction or operation of the proposed facility. *See*, Applicant Exhibit C (Pre-filed testimony of Charles Malcolm, p. 9), Applicant Exhibit A (Application, Appendix F, p. 4-5).

Similarly TGP asserts that there will be no impact to fish or wildlife at the Concord location. *See*, Applicant Exhibit A (Application, Appendix F, p. 7). TGP also reports that there will not be any impact on fish at the Pelham site as the site does not affect any waterbodies. *Id*; Applicant Exhibit C (Pre-filed testimony of Charles Malcolm, p. 8). TGP reports that there is various wildlife located at the Pelham site although there is no known threatened or endangered species believed to be located within the Pelham site. *See*, Applicant Exhibit A (Application, Appendix F, p. 7, 11.) TGP represents that impacts to wildlife at the Pelham site should be minimal and temporary. The site is located in proximity to both residential and industrial areas. There will be some loss of habitat as the result of construction within 6.8 acres of the site but, with the exception of the compressor station itself and the adjacent lawn area, that habitat should be restored after construction is complete and re-vegetation has been achieved. *See*, Applicant Exhibit A (Application, Appendix F, p. 9); Applicant Exhibit C (Pre-filed testimony of Charles Malcolm, p. 9.) The United States Fish and Wildlife Service and the New Hampshire Natural Heritage Bureau have both confirmed that there are no threatened/endangered species or

significant habitat types or vegetative communities of special concern. *See*, Applicant Exhibit A (Application, Appendix F, p. 9).

TGP has also submitted a FERC Environmental Assessment, *see*, Exhibit O, pp. 8 -13, that confirms TGP's assertions and representations concerning the minimal effect of this project on the natural environment. The FERC Environmental Assessment and the FERC Certificate of Public Convenience and Necessity both find that there is no significant environmental impact as a result of the proposed Facility. *See*, Applicant Exhibit I (FERC Certificate, p. 9); Applicant Exhibit O (FERC Environmental Assessment, p. 40.)

In addition TGP submits that the project will be constructed in accordance with a collection of plans and procedures that represent the construction best management practices for this project. Those plans and procedures include FERC's Upland Erosion Control, Revegetation and Maintenance Plan, FERC's Wetland and Waterbody Construction and Mitigation Procedures, a Spill Prevention Control and Countermeasure Plan, an Unanticipated Discovery Plan for Cultural Resources, and the Waste Management Plan. These plans and procedures are collected in Appendix G of the Application. *See*, Applicant Exhibit A, (Application, Appendix G.) TGP also notes that an environmental inspector will monitor construction activities to ensure compliance with the following: the specifications of the Plans; all applicable federal, regional, state, and local environmental permit conditions; site specific construction and restoration plans; and other mitigation measures. *See*, Applicant Exhibit A (Application, p. 4.)

The Committee finds that the Application and other supporting documents and exhibits amply demonstrate that the project, if built in accordance with the specifications and conditions set forth in the Application, will not have an unreasonable adverse effect on the natural environment. It is also noted that the conditions of the Temporary Air Permit issued by ARD and

the Wetlands Permit and Subsurface Waste Permit issued by the DES Water Division also contribute to maintaining the quality of surface waters and the natural environment.

**f. Public Health and Safety**

**i. Natural Gas Safety Issues.** TGP certifies that the facilities will be designed, constructed, tested, operated, and maintained to conform with all applicable federal, state, and local regulations, including 49 C.F.R. Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards," and 18 C.F.R. §380.15, "Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities." Applicant Exhibit A (Application, p. 4). TGP has made a similar certification to the Federal Energy Regulatory Commission. Applicant Exhibit O (FERC Environmental Assessment, p. 30).

Federal and state law provide an extensive set of regulations pertaining to the safe transportation of natural gas and other hazardous materials by a pipeline system. The project in this case is part of that system and will be subject to both federal and state safety regulations. On the federal level, pipeline safety is delegated to the Department of Transportation (DOT.) *See*, 49 U.S.C. § 601. The Pipeline and Hazardous Materials Safety Administration's (PHMSA), Office of Pipeline Safety (OPS), administers the national regulatory program and safety performance standards that apply to the design, construction, testing, operation and maintenance of all pipeline facilities. The federal regulatory scheme also applies to emergency responses at pipeline facilities. The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of 49 CFR specifically addresses natural gas transportation safety issues. The federal safety standards provide minimum standards for operating and maintaining pipeline systems. In addition the standards include a requirement that each pipeline owner must establish



an emergency response plan, maintain communications with local emergency response providers and establish a training program for local responders, government officials and the public. *See generally*, 49 C.F.R. 192.615.

While the federal regulations are designed for the protection of people and property, this task is not left solely to the federal government. The regulatory scheme allows states to share in the task of protecting the public and permits qualified state agencies to perform inspection and monitoring activities during construction and operation of pipeline facilities. In New Hampshire, the Safety Division of the Public Utilities Commission is the state agency that would perform such inspections. In this case the PUC Safety Division has communicated with PHMSA and will be responsible for inspecting these facilities during the construction phase of this project.

Transcript, February 10, 2009, p. 43 (Statement of Mr. Randy Knepper, Director, PUC Safety Division.) This should assure local regulation and oversight of the safety aspects of this project.

The Committee finds that there is no evidence in the record demonstrating that the foregoing regulatory and compliance scheme is inadequate to assure that there is no unreasonable adverse impact on public safety. Similarly, the FERC Environmental Assessment found that the construction and operation project does not pose a significant hazard to the safety of the public. *See*, Applicant Exhibit O, p. 33.

**ii. Spills.** As part of the Application, TGP has filed a comprehensive spill prevention, control, and countermeasure plan. *See*, Applicant Exhibit A (Application, Appendix G.) This plan sets forth prevention and minimization efforts that a contractor must undertake in the event of a spill of petroleum products, hazardous products, chemicals, or asbestos. The plan also pertains to the unplanned flaring or venting of natural gas. The plan includes training, inspection and maintenance and impact minimization requirements. *See*, Applicant Exhibit A

(Application, Appendix G.) The Committee finds that nothing in the record indicates that the Spill Prevention, Control, and Countermeasure Plan, is inadequate.

**iii. Noise Issues.** TGP previously received a Certificate of Necessity from FERC. The FERC Certificate contains the following condition pertaining to noise generated by the compressor station:

Tennessee shall make all reasonable efforts to ensure its predicted noise levels from compressor station 270B1 are not exceeded at the NSAs and file noise surveys with the Secretary no later than 60 days after placing the compressor station in-service. If the noise attributable to the operation of the compressor station at full loads exceeds 55 dBA  $L_{dn}$  at any nearby NSAs, Tennessee shall file a report on what changes are needed and should install additional noise controls to meet the level within one year of the in-service date. Tennessee should confirm compliance with these requirements by filing a second noise survey with the secretary no later than 60 days after it installs the additional noise controls.

*See*, Applicant Exhibit I; State, Exhibit 4. The maximum noise level contained in the FERC Certificate is specified by FERC regulations. *See*, 18 C.F.R. 380.12 (k) (4) (v) (A). Since the issuance of the FERC Certificate, TGP has performed additional studies and made modifications to the construction plans for the compressor station. *See*, Applicant Exhibit H. The modifications to the compressor station plans result in a predicted noise performance level that ranges from 46 to 48 dBA  $L_{dn}$  at the various Noise Sensitive Areas (NSAs). *See*, Applicant Exhibit I; State, Exhibit 4. This predicted range of sound levels is well below the FERC standard. TGP and Counsel for the Public agree that the specifications contained in Applicant's Exhibit H should become incorporated into a condition of the Certificate of Site and Facility.

The only area of dispute between TGP and Counsel to the Public pertains to operational noise conditions. TGP and Counsel for the Public agree that the Facility shall be constructed in substantial conformity with those parameters contained in Section 4, "Station Sound Level

Treatment Summary" in the Report of HFP Acoustical Consultants, Inc., dated November 6, 2008. *See*, Applicant Exhibit H. If those parameters are followed, TGP and Counsel for the Public agree that the predicted sound levels should range from 46 to 48 dBA  $L_{dn}$  at the various NSAs. However, TGP and Counsel for the Public disagree about the terms of the conditions that should be imposed by this Committee pertaining to the actual sound levels achieved once the Facility is in service.

TGP's proposed conditions require that the project be constructed in accordance with the specifications identified in Applicant's Exhibit H and in Counsel for the Public's, Exhibit 7-16 (letter from David M. Jones, HFP Acoustical Consultants, dated November 6, 2008). Compliance with these specifications leads to a predicted sound level of 46-48 dBA  $L_{dn}$ . TGP also supports a condition that places a maximum limit on noise actually generated by the operation of the facility consistent with the condition issued by the Federal Energy Regulatory Commission in its Order Issuing a Certificate dated August 28, 2008, at 55 dB(A)  $L_{dn}$ . *See*, Applicant Exhibit I; State, Exhibit 4. TGP argues that 55 DBA  $L_{dn}$  provides a safe and consistent standard that is utilized throughout the country as part of FERC's mandate under the Natural Gas Act to implement a national policy of ensuring an adequate supply of natural gas and ensuring that gas transportation reliability is balanced against the protection of public safety. TGP further argues that the imposition of a stricter standard would punish it for being a good citizen, a good neighbor and designing a facility that is predicted to perform well within the nationally set standard limit. TGP also asserts that setting a different standard in this proceeding would cause confusion and legal disputes and also pressure TGP to submit to lower maximum sound levels on other projects where such performance may not be as easily attainable. *See*,

Testimony of Michael Stokdyk, Transcript, December 1, 2008, p. 30 – 34; Applicant's Post Hearing Memorandum, p. 6-7.

Counsel for the Public argues that TGP should be required to construct the facility within the specifications set forth by Mr. Jones including such acoustical lagging and walls or barriers that may be necessary to achieve a 46-48 dBA  $L_{dn}$ . In addition, Counsel for the Public argues that the upper noise limit for sound actually generated by the facility should be 50 dBA  $L_{dn}$  rather than 55 dBA  $L_{dn}$  as set by FERC. Counsel for the Public argues that because the facility is predicted to achieve a 46-48 dBA  $L_{dn}$ , if constructed in accordance with the specifications, Applicant should be required by the Certificate to maintain noise levels at 50 dBA  $L_{dn}$  or less. Counsel for the Public advocates for a lower maximum sound level limit because it is achievable in this case; and, it is a "good idea." *See*, Counsel for the Public's Memorandum of Law, December 1, 2008, p. 7. Counsel for the Public asserts that the Committee should not be concerned about whether the lower limit causes confusion, legal disputes or substantial difference in noise limits between different compressor stations. *See*, Counsel for the Public's Memorandum of Law, p. 7-9, 11-12. Counsel for the Public requests a set of noise conditions that requires the same construction and operational specifications as sought by TGP but subject to the lower maximum limit on sound level.

The Committee applauds TGP's efforts in refining its plans and specifications for the construction of the compressor station to reduce the predicted sound levels to levels that are well below the national standard set by FERC. If the Committee were to adopt Counsel for the Public's condition we would effectively be discouraging TGP from pursuing more protective specifications and lower sound levels. *See*, Transcript February 10, 2009, p. 49 – 50 (Statement

of Commissioner Below expressing belief that TGP should not be penalized for taking additional measures.) The Committee also recognizes that differing noise standards may cause unnecessary confusion and legal disputes in an area where FERC has effectively set a national standard for compressor facilities. *See*, 18 C.F.R. 380.12 (k) (4) (v) (A). If the operational noise levels should generate complaints in the future, this Committee has continuing jurisdiction to enforce the terms and conditions of the Certificate of Site and Facility. *See*, R.S.A 162-H: 4, I (d). This jurisdiction includes the authority to investigate complaints. *See*, NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES, Site 302.01. Under these circumstances the Committee believes that it is not necessary to adopt the stricter maximum sound level espoused by Counsel for the Public. The FERC standard provides a reasonable maximum sound level that in all likelihood will not be reached by this compressor station. However, the Committee does need to remain apprised of the actual sound levels generated by the facility once it is in service. Therefore, the Committee will adopt the following conditions pertaining to sound levels as part of the Certificate of Site and Facility:

- 1) The Applicant shall design, construct and maintain the compressor station in substantial conformity with those parameters contained in Section 4, "Station Sound Level Treatment Summary" in the Report of HFP Acoustical Consultants, Inc., dated November 6, 2008. *See*, Applicant Exhibit H.
- 2) The Applicant shall construct, operate and maintain the Station so that it remains in full compliance with applicable FERC sound level regulations. *See*, Applicant Exhibit I.
- 3) TGP shall file copies of all noise surveys, reports, and studies filed with FERC with this Committee and inform the Committee of any action taken by FERC in response to said filings.
- 4) The Committee retains its authority to monitor the proposed facility, to investigate complaints and to enforce the terms and conditions of the Certificate of Site and Facility, including the authority to require further sound level testing or additional remedial measures.

Based upon the foregoing, and considering the Application as a whole, the Committee finds that the proposed site and facility will not have an unreasonable adverse impact on aesthetics, historic sites, air and water quality, the natural environment or public health and safety.

#### **4. Consistency with State Energy Policy.**

In order to issue a certificate of site and facility, the Committee must find that the operation of the proposed facility is consistent with the state energy policy as established in RSA 378:37. *See*, RSA 162-H: 16 IV (d). RSA 378:37 states that it is the energy policy of this state:

To meet the energy needs of the citizens and businesses of the state at the lowest reasonable cost while providing for the reliability and diversity of energy sources; the protection of the safety and health of the citizens, the physical environment of the state, and the future supplies of non-renewable resources; and consideration of the financial stability of the state's utilities.

TGP asserts that construction of the facility is consistent with state energy policy because it will supply Energy North with additional natural gas capacity and thereby increase the reliability of the state's energy supply while at the same time permitting Energy North to expand service and thereby bring more diverse energy options to citizens and businesses in New Hampshire. TGP also asserts that natural gas is a cleaner fuel than other fossil fuels and will therefore contribute to an overall improvement of air quality for the citizens of the state. *See*, Applicant Exhibit A (Application, p. 4); Applicant Exhibit B (Pre-filed Testimony of Michael Stokdyk, p. 6.) The Applicant also points out that the agreement between TGP and Energy North for the increased capacity was approved by the New Hampshire Public Utilities Commission as being in the public interest on February 29, 2008. *See*, NHPUC Order No. 24,825, EnergyNorth Natural Gas, Inc, d/b/a Keyspan Energy Delivery, Docket No. DG 07-101.

The Committee finds that the proposed facility is consistent with the state's energy policy. The facility will increase the natural gas capacity for Energy North, a major supplier of natural gas in the state. The project accomplishes the increased capacity using the existing Concord Lateral and does not require the construction of an additional pipeline that would have additional adverse impacts on the environment. The project will also provide an increase in a reliable source of energy to the customers of Energy North.

## **VI. CONCLUSION**

Despite the fact that Application in this docket generated little controversy, the Committee has thoroughly and carefully reviewed the Application, the exhibits and other filings, and the briefs filed by the parties. The Committee has also carefully considered the comments received from the public. Having considered the available alternatives and reviewed the environmental impact of the proposed facility and all other relevant factors bearing on the objectives of RSA 162-H the Committee finds that:

- A. The Applicant has adequate financial technical and managerial capability to assure construction and operation of the facility in continuing compliance with the terms and conditions of the Certificate of Site and Facility;
- B. Having sought and considered the views of municipal and regional planning committees and municipal governing bodies, construction and operation of the proposed facility will not unduly interfere with the orderly development of the region;
- C. The construction and operation of the proposed facility will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment or public health and safety; and,
- D. Operation of the proposed facility is consistent with the state energy policy established by RSA 378:37.

Therefore, the Committee shall issue a Certificate of Site and Facility subject to the conditions contained herein and in said Certificate.

Attachment A  
STATE OF NEW HAMPSHIRE  
SITE EVALUATION COMMITTEE

**Docket No. 2008-02**

**Application of Tennessee Gas Pipeline Company for a  
Certificate of Site and Facility for the Concord Lateral Expansion Project,  
Merrimack and Hillsborough Counties, New Hampshire.**

**ORDER  
CERTIFICATE OF SITE AND FACILITY**

WHEREAS, the Applicant, Tennessee gas Pipeline Company, filed an Application for a Certificate of Site and Facility for the Concord Lateral Expansion Project seeking authorization for the construction and operation of an energy facility in Pelham, Hillsborough County, New Hampshire, consisting of a new 6,130 horsepower turbine driven centrifugal compressor unit fueled by natural gas that will be installed inside a new compressor building. Associated facilities that will also be constructed and operated by the Applicant include a filter separator, discharge gas cooler, and blow down silencer, control building, and an auxiliary building. The construction and operation of the compressor will allow the Applicant to provide an incremental 30,000 dekatherms per day of capacity to Energy North;

Whereas, the Application for a Certificate of Site and Facility also seeks approval of certain upgrades at the Applicant's existing Laconia Meter Station which is located in Concord, New Hampshire (Meter Station) with piping modifications to accommodate the aforementioned additional capacity;

Whereas, the site in Pelham, Hillsborough County is located on private property on a parcel of land identified by the Town of Pelham Tax Map as Lot 1-5-111 (map/parcel/lot). The Pelham location consists of 11.6 acres of which 4.2 acres will be fenced to contain the compressor building and required auxiliary buildings;

Whereas, the upgrades at the Meter Station in Concord, New Hampshire, will occur at 17 Broken Bridge Road, Concord, New Hampshire, 03301 at an existing structure located within a fenced area in Concord, New Hampshire, occupying .50 acres. The existing Meter Station is comprised of 2 measuring facilities: the Concord measuring facility and the Laconia measuring facility. The Applicant proposes to replace a total of approximately 60 feet of existing 4" and 6" pipe from Line 273C-100 to the Laconia measuring facility with 12" pipe. Additionally, existing 6" piping within the meter station will be reconfigured and reconnected between Lines 273C-100 and 270B-100 to serve as a tie-over line to insure continuous service in the event of outages on the primary line;

Whereas, the Committee has held a number of public meetings and hearings regarding the Application including a Public Informational Hearing pursuant to RSA 162-H: 10 in



Concord, Merrimack County on July 17, 2008, and a Public Informational Hearing in Pelham, Hillsborough County on July 17, 2008, and adjudicative proceedings on December 1, 2008;

Whereas, the Committee has received and considered written and oral comments from the public concerning the Application;

Whereas, the Committee has considered available alternative sites and fully reviewed the impact of the site and all other relevant factors bearing on whether the objectives of RSA 162-H would be best served by the issuance of a certificate;

Whereas, the Committee finds that the Applicant has adequate financial, technical, and managerial capability to assure construction and operation of the facility in continuing compliance with the terms and conditions of this Certificate;

Whereas, the Committee finds that the proposed facility will not unduly interfere with the orderly development of the region, with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies;

Whereas, the Committee finds that the proposed facility will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment, and public health and safety; and,

Whereas, the Committee finds that the siting, construction and operation of the proposed facility is consistent with the state energy policy established in RSA 378:37.

NOW THEREFORE, it is hereby ORDERED that the Application of Tennessee Gas Pipeline Company is approved subject to the conditions set forth herein and this Order shall be deemed to be a Certificate of Site and Facility pursuant to RSA 162-H: 4; and it is,

Further Ordered, that the Site Evaluation Committee's Decision, dated March 12, 2009, and conditions contained therein, are hereby made a part of this Order; and it is,

Further Ordered, that the Applicant may site, construct and operate the facility as outlined in and subject to the specifications in the Application and subject to the terms and conditions of the Decision and this Order; and it is,

Further Ordered, that this Certificate is not transferable to any other person or entity without the prior written approval of the Committee. In the event of an unapproved transfer of the Certificate or the Facility, this Certificate shall be null and void; and it is,

Further Ordered, that the Applicant shall provide immediate notice to the Committee in the event that the Applicant or any of its parent companies shall file a bankruptcy or insolvency petition in any jurisdiction, foreign or domestic; and it is,

Further Ordered, that all permits and/or certificates recommended by the New Hampshire Department of Environmental Services including the Subsurface Septic System Permit, the Alteration of Terrain Permit and the Temporary Air Permit shall issue and this Certificate is conditioned upon compliance with all conditions of said permits and/or certificates which are appended hereto as Appendix 1; and it is,

Further Ordered, that the New Hampshire Department of Environmental Services is authorized to specify the use of any appropriate technique, methodology, practice or procedure associated with the conditions of the aforementioned permits, including the authority to approve minor modifications to said permits and certificates; and it is,

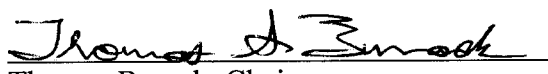
Further Ordered, that the Applicant shall comply with all of the terms and conditions of the Certificate of Public Convenience and Necessity issued by the Federal Energy Regulatory Commission (FERC) on August 28, 2008, in FERC Docket No. CP08-65-00, 124 FERC ¶ 61,198; and it is,

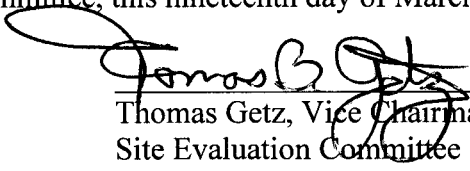
Further Ordered, that the Applicant shall comply with the Conditions Pertaining to Operational Noise which are attached hereto as Appendix 2; and it is,

Further Ordered, that to the extent that blasting may be necessary in the construction or decommissioning of the facility the Applicant shall comply with all rules and regulations for blasting and the transportation of explosive materials and use of state and local thoroughfares as promulgated by statute or the regulations of the New Hampshire Department of Safety and the New Hampshire Department of Transportation. The Department of Safety and the Department of Transportation are each delegated the authority to specify the use of any appropriate technique, methodology, practice or procedure associated with blasting, transportation of explosives or other heavy loads which shall occur during the construction or decommissioning of the facility; and it is,


Further Ordered, that all Conditions contained in this Certificate and in the Decision shall remain in full force and effect unless otherwise ordered by the Committee.

By Order of the Site Evaluation Committee, this nineteenth day of March, 2009.

  
Thomas Burack, Chairman  
Site Evaluation Committee


  
Thomas Getz, Vice Chairman  
Site Evaluation Committee

  
Clifton Below, Commissioner  
NH Public Utilities Commission

  
Graham Morrison, Commissioner (KMS)  
NH Public Utilities Commission



Glenn Normandeau, Executive Director  
NH Fish & Game Department



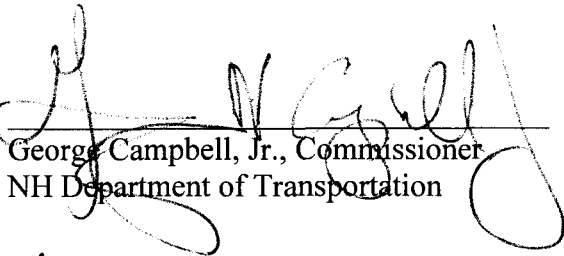
Harry Stewart, Director – Water Division  
Department of Environmental Services



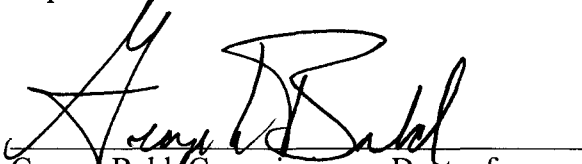
Brook Dupee, Commissioner -Designee  
Department of Health & Human Services



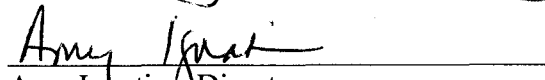
Robert Scott, Director – Air Resources Div.  
Department of Environmental Services



George Campbell, Jr., Commissioner  
NH Department of Transportation



George Bald, Commissioner, Dept. of  
Resources & Economic Development



Amy Ignatius, Director  
Office of Energy & Planning



Randall Knepper, Staff Engineer  
NH Public Utilities Commission

## **Appeals Process**

Any person or party aggrieved by this decision or order may appeal this decision or order to the New Hampshire Supreme Court by complying with the following provisions of RSA 541

**R.S.A. 162-H: 11 Judicial Review.** – Decisions made pursuant to this chapter shall be reviewable in accordance with RSA 541.

**R.S.A. 541:3 Motion for Rehearing.** - Within 30 days after any order or decision has been made by the commission, any party to the action or proceeding before the commission, or any person directly affected thereby, may apply for a rehearing in respect to any matter determined in action or proceeding, or covered or included in the order, specifying in the motion all grounds for rehearing, and the commission may grant such rehearing if in its opinion good reason for the rehearing is stated in the motion.

**R.S.A. 541:4 Specifications.** - Such motion shall set forth fully every ground upon which it is claimed that the decision or order complained of is unlawful or unreasonable. No appeal from any order or decision of the commission shall be taken unless the appellant shall have made application for rehearing as herein provided, and when such application shall have been made, no ground not set forth therein shall be urged, relied on, or given any consideration by the court, unless the court for good cause shown shall allow the appellant to specify additional grounds.

**R.S.A. 541:5 Action on Motion.** – Upon the filing of such motion for rehearing, the commission shall within ten days either grant or deny the same, or suspend the order or decision complained of pending further consideration, and any order of suspension may be upon such terms and conditions as the commission may prescribe.

**R.S.A. 541:6 Appeal.** Within thirty days after the application for a rehearing is denied, or, if the application is granted, then within thirty days after the decision on such rehearing, the applicant may appeal by petition to the supreme court.

## APPENDIX 1

### NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES PERMIT CONDITIONS

- Subsurface Septic System Permit
- Alteration of Terrain Permit
- Temporary Air Permit

## **SUBSURFACE SYSTEMS PROGRAM DECISION**

### **RECOMMEND APPROVAL:**

Recommend to the New Hampshire Energy Facility Site Evaluation Committee (hereinafter "SEC") pursuant to RSA 162-H, approval of the proposal to construct a new septic system at the proposed natural gas compressor station.

### **PROJECT SPECIFIC CONDITIONS:**

1. The septic system must be constructed in strict accordance with the plans and supporting documentation associated with Construction Approval Number CA2008092652 issued by the Department on May 5, 2008.
2. Revised plans shall be submitted for an amendment approval prior to any changes in construction details.
3. A request for inspection from the Department must be made by the applicant and an Approval for Operation must be granted prior to use of the system.
5. This approval expires on May 5, 2012. No construction activities shall occur on the project after expiration of the approval unless the approval has been extended by the Department.
6. This approval does not relieve the applicant from the obligation to obtain other local, state or federal permits that may be required.

## **ALTERATION OF TERRAIN PROGRAM DECISION**

### **RECOMMEND APPROVAL:**

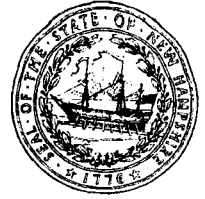
Recommend to the New Hampshire Energy Facility Site Evaluation Committee (hereinafter "SEC") pursuant to RSA 162-H, approval of the proposal to disturb approximately 296,200 square feet of land to construct a new natural gas compressor station.

### **PROJECT SPECIFIC CONDITIONS:**

1. Water quality degradation shall not occur as a result of the project.
2. Revised plans shall be submitted for an amendment approval prior to any changes in construction details or sequences. The Department must be notified in writing within ten days of a change in ownership.
3. The Department must be notified in writing prior to the start of construction and upon the completion of construction.
4. The revised plans received June 24, 2008 and supporting documentation in the file are a part of this approval.
5. This approval expires on **\*\*\*DATE\*\*\***. No construction activities shall occur on the project after expiration of the approval unless the approval has been extended by the Department.
6. This approval does not relieve the applicant from the obligation to obtain other local, state or federal permits that may be required (e.g. from US EPA, US Army Corps of Engineers, etc.) Projects disturbing over 1 acre require a federal stormwater permit from EPA. Information regarding this permitting process can be obtained through the following e-mail address:  
[www.des.state.nh.us/StormWater/construction.htm](http://www.des.state.nh.us/StormWater/construction.htm).
7. The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.



The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



**Thomas S. Burack, Commissioner**

August 15, 2008

Thomas S. Burack, Chairman  
New Hampshire Site Evaluation Committee  
c/o New Hampshire Department of Environmental Services  
29 Hazen Drive, PO Box 95  
Concord, NH 03302-0095

**RE: State Agency Final Decision  
Tennessee Gas Pipeline Company – Concord Lateral Expansion Project  
SEC Docket No. 2008-02**

Dear Chairman Burack:

In accordance with RSA 162-H:6 VI, the New Hampshire Department of Environmental Services, Air Resources Division (DES) is required to make and submit to the New Hampshire Site Evaluation Committee (NHSEC) a final decision on the part of the Tennessee Gas Pipeline, Concord Lateral Expansion Project (Tennessee Gas Pipeline) application as it pertains to air emissions.

DES has made a final decision to grant a Temporary Permit to Tennessee Gas Pipeline. Attached please find a copy of the Permit.

A copy of this letter and the final Temporary Permit will be forwarded to each NHSEC member and the applicant. If you have any questions on this matter, please contact me at (603) 271-2630 or via e-mail at [gary.milbury@des.nh.gov](mailto:gary.milbury@des.nh.gov).

Sincerely,

Gary Milbury, Jr.  
New Construction/Planning Manager  
Air Resources Division

Attachment: Final Temporary Permit TP-B-0544

Cc: NHSEC Members  
Mr. William B. Cope – Tennessee Gas Pipeline  
Ms. Trinh Tran – Eastern Pipelines Environmental  
Ms. Tricia Beazley – Tetra Tech EC, Inc.





The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



Thomas S. Burack, Commissioner

August 15, 2008

Mr. William G. Cope  
Vice President - Operations  
Tennessee Gas Pipeline Company  
1001 Louisiana Street  
Houston, Texas 77002

**Re: Temporary Permit TP-B-0544  
One Compressor Turbine and One Emergency Generator  
Tennessee Gas Pipeline Company  
Concord Expansion Compressor Station  
Mammoth Rd., Pelham, New Hampshire  
Facility Identification #3301191266, Application #08-0023**

Dear Mr. Cope:

The New Hampshire Department of Environmental Services hereby issues the enclosed permit in accordance with the New Hampshire Code of Administrative Rules Env-A 100 *et seq.*, *New Hampshire Rules Governing the Control of Air Pollution*.

Enclosed please find a questionnaire distributed by our Public Information and Permitting Unit. We are constantly trying to improve our permit processing and your feedback is greatly appreciated. If you have any questions, please contact Muriel Lajoie of the Air Resources Division, Permitting and Environmental Health Bureau at (603) 271-2822 or via e-mail at [muriel.lajoie@des.nh.gov](mailto:muriel.lajoie@des.nh.gov)

Sincerely,

Robert R. Scott  
Director  
Air Resources Division

rrs/vhd

Enclosures: TP-B-05644 and Application Review Summary  
By certified mail # 7006 3450 0001 6018 5505

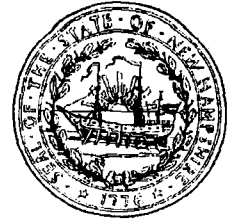
cc: Ida McDonnell, USEPA, Region I  
Town of Pelham  
Town of Windham  
Trinh Tran, Eastern Pipelines Env.  
Tricia Beazley, Tetra Tech EC, Inc.

DES Web site: [www.des.nh.gov](http://www.des.nh.gov)

P.O. Box 95, 29 Hazen Drive, Concord, New Hampshire 03302-0095

Telephone: (603) 271-1270 Fax: (603) 271-1271

State of New Hampshire  
Department of Environmental Services  
Air Resources Division



## Temporary Permit

Permit No: TP-B-0544  
Date Issued: August 15, 2008

This certifies that:

**Tennessee Gas Pipeline Company**  
**1001 Louisiana Street**  
**Houston, Texas 77002**

has been granted a Temporary Permit for:

**One Compressor Turbine and One Emergency Generator**


at the following Facility and location:

**Concord Expansion Compressor Station**  
**Mammoth Road**  
**Pelham, New Hampshire 03076**

Facility ID No: **3301191266**  
Application No: **08-0023**, received January 31, 2008 – Temporary Permit

which includes devices that emit air pollutants into the ambient air as set forth in the permit application referenced above which was filed with the New Hampshire Department of Environmental Services, Air Resources Division (Division) in accordance with RSA 125-C of the New Hampshire Laws. Request for permit renewal is due to the Division at least 90 days prior to expiration of this permit and must be accompanied by the appropriate permit application forms.

This permit is valid upon issuance and expires on **February 28, 2010**.

  
\_\_\_\_\_  
Director  
Air Resources Division

**Abbreviations and Acronyms**

AAL	Ambient Air Limit
acf	actual cubic foot
ags	above ground surface
ASTM	American Society of Testing and Materials
Btu	British thermal units
CAS	Chemical Abstracts Service
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DER	Discrete Emission Reduction
DES	New Hampshire Department of Environmental Services
Env-A	New Hampshire Code of Administrative Rules -- Air Resources Division
ERC	Emission Reduction Credit
ft	foot or feet
ft <sup>3</sup>	cubic feet
gal	gallon
HAP	Hazardous Air Pollutant
hp	horsepower
hr	hour
kW	kilowatt
lb	pound
LPG	Liquified Petroleum Gas
MM	million
MSDS	Material Safety Data Sheet
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NG	Natural Gas
NO <sub>x</sub>	Oxides of Nitrogen
NSPS	New Source Performance Standard
PM <sub>10</sub>	Particulate Matter < 10 microns
ppm	parts per million
ppmdv	parts per million dry volume
psi	pounds per square inch
RACT	Reasonably Available Control Technology
RSA	Revised Statutes Annotated
RTAP	Regulated Toxic Air Pollutant
scf	standard cubic foot
SO <sub>2</sub>	Sulfur Dioxide
TSP	Total Suspended Particulate
tpy	tons per consecutive 12-month period
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

### I. Facility Description

The purpose of the Facility is to maintain pressure in the natural gas pipeline, through the use of a centrifugal compressor driven by a natural gas-fired turbine. Compressor Station 270B1 is part of the Concord Expansion Project to support growth needs in NH.

### II. Emission Unit Identification

This permit covers the devices identified in Table 1:

Table 1 - Emission Unit Identification				
Emission Unit ID	Device Identification	Manufacturer Model Number Serial Number	Installation Date	Maximum Design Capacity and Fuel Type(s) <sup>1</sup>
EU01	Compressor Turbine #1	Solar Centaur 50-6200LS TBD	2008	58.4 MMBtu/hr Natural gas – equivalent to 56,000 scf/hr @ 40 degrees Fahrenheit.
EU02	Emergency Generator	TBD TBD TBD	2008	4.68 MMBtu/hr Natural gas – equivalent to 4,489 scf/hr @ 40 degrees Fahrenheit.

### III. Stack Criteria

- A. The following devices at the Facility shall have an exhaust stack that discharges vertically, without obstruction, and meet the criteria in Table 2:

Table 2 - Stack Criteria			
Stack Number	Emission Unit or Pollution Control Equipment ID	Minimum Height (feet above ground surface)	Maximum Exit Diameter (feet)
1	EU01	55	6

- B. Stack criteria described in Table 2 may be changed without prior approval from the Division provided that:
1. An air quality impact analysis is performed either by the Facility or the Division (if requested by the Facility in writing) in accordance with Env-A 606, *Air Pollution Dispersion Modeling Impact Analysis Requirements*, and the "Guidance and Procedure for Performing Air Quality Impact Modeling in New Hampshire," and
  2. The analysis demonstrates that emissions from the modified stack will continue to comply with all applicable emission limitations and ambient air limits.
- C. All air modeling data and analyses shall be kept on file at the Facility for review by the Division upon request.

<sup>1</sup> The hourly fuel rates presented in Table 1 are set assuming a high heating value (HHV) of 1,042.5 Btu/scf for natural gas.

#### IV. Operating and Emission Limitations

The Owner or Operator shall be subject to the operating and emission limitations identified in Table 3:

Table 3 - Operating and Emission Limitations			
Item #	Requirement <sup>2</sup>	Applicable Emission Unit	Regulatory Basis
1	<u>Standards of Performance for Stationary Combustion Turbines</u> The compressor turbine shall comply with the following emissions limitations: a. NOx concentration not to exceed 25 ppmdv corrected to 15 percent O <sub>2</sub> .	EU01	40 CFR 60.4320, Table 1 (Subpart KKKK)
2	<u>Emergency Generator</u> The emergency generator shall comply with the following emissions limitations: a. NOx concentration not to exceed 160 ppmdv corrected to 15 percent O <sub>2</sub> . b. CO concentration not to exceed 540 ppmdv corrected to 15 percent O <sub>2</sub> . <sup>3</sup> c. VOC concentration not to exceed 86 ppmdv corrected to 15 percent O <sub>2</sub> .	EU02	40 CFR 60.4233(e), Table 1 (Subpart JJJJ)
3	<u>Visible Emission Standard for Fuel Burning Devices Installed After May 13, 1970</u> The average opacity from fuel burning devices installed after May 13, 1970 shall not exceed 20 percent for any continuous 6-minute period. <sup>4</sup>	EU01 & EU02	Env-A 2002.02
4	<u>Activities Exempt from Visible Emission Standards</u> The average opacity shall be allowed to be in excess of those standards specified in Env-A 2002.02 for one period of 6 continuous minutes in any 60 minute period during startup, shutdown or malfunction.	EU01 & EU02	Env-A 2002.04(c)

<sup>2</sup> The Facility does not have the potential to emit the criteria pollutants NOx, SO<sub>2</sub>, CO, PM<sub>10</sub>, VOCs or Hazardous Air Pollutants (HAPs, as defined in Section 112 of the 1990 Clean Air Act Amendments) at levels greater than the major source thresholds for these pollutants. Therefore, the Facility is a true minor source for NOx, SO<sub>2</sub>, CO, PM<sub>10</sub>, VOCs and HAPs.

<sup>3</sup> Stationary SI ICE greater than 100 hp manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR 1048 may comply with the carbon monoxide (CO) standard for which the engine was certified.

<sup>4</sup> Compliance with visible emission limitations shall be determined using 40 CFR 60, Appendix A, Method 9, upon request by the Division.

**Table 3 - Operating and Emission Limitations**

Item #	Requirement <sup>2</sup>	Applicable Emission Unit	Regulatory Basis
5	<u>Particulate Emission Standards for Fuel Burning Devices Installed on or After January 1, 1985</u> The particulate matter emissions from fuel burning devices installed on or after January 1, 1985 shall not exceed 0.30 lb/MMBtu.	EU01 & EU02	Env-A 2002.08
6	<u>Maximum Sulfur Content Allowable in Gaseous Fuels</u> Gaseous fuel shall contain no more than 15 grains of sulfur per 100 cubic feet of gas at standard temperature and pressure. <sup>5</sup>	EU01 & EU02	Env-A 1605.01
7	<u>Emergency Generator</u> Each emergency generator shall only operate: a. As a mechanical or electrical power source when the primary power source for the Facility has been lost during an emergency such as a power outage; or b. During normal maintenance and testing as recommended by the manufacturer.	EU02	Env-A 1211.02(o)
8	<u>Emergency Generator</u> a. If the engine <u>is</u> maintained according to the manufacturer's emission-related written instructions, keep records of conducted maintenance to demonstrate compliance or; b. If the engine <u>is not</u> maintained according to the manufacturer's emission-related instructions, demonstrate compliance in accordance with Table 4, Item 3.	EU02	40 CFR 60.4243(b)(1) (Subpart JJJJ)
9	<u>Emergency Generator</u> The emergency generator may operate up to 50 hours per year in non-emergency situations <sup>6</sup> , but those 50 hours are counted towards the 100 hour limit of operation during any consecutive 12-month period for maintenance checks and readiness testing and total operation shall be limited to 500 hours of operation during any consecutive 12-month period.	EU02	Env-A 1211.01(j)(1) and 40 CFR 60.4243(d) (Subpart JJJJ)

<sup>5</sup> This condition has been streamlined to cover both state and federal air regulations. Compliance the 15 gr/100 scf limit for gaseous fuels will ensure compliance with the 0.060 lb/ SO<sub>2</sub>/MMBtu limit found in 40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.

<sup>6</sup> The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a Facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

## Concord Expansion Compressor Station

**V. Monitoring and Testing Requirements**

The Owner or Operator is subject to the monitoring and testing requirements as contained in Table 4:

<b>Table 4 - Monitoring and Testing Requirements</b>					
<b>Item #</b>	<b>Parameter</b>	<b>Method of Compliance</b>	<b>Frequency</b>	<b>Applicable Unit</b>	<b>Regulatory Basis</b>
1	To Be Determined	When conditions warrant, the Division may require the Owner or Operator to conduct stack testing in accordance with USEPA or other Division approved methods.	Upon request by the Division	Facility Wide	RSA 125-C:6 XI
2	Sulfur Content of Gaseous Fuels	Conduct testing to determine the sulfur content in grains of sulfur per 100 cubic feet of gaseous fuels by: a. conducting testing in accordance with appropriate ASTM test methods, or; b. maintaining a current, valid purchase contract or tariff sheet for the natural gas, specifying that the maximum total sulfur content for the fuel is in compliance with the sulfur content limitation provisions found in Table 3, Item 6.	Once Annually	Facility Wide	40 CFR 60.4360 and 40 CFR 60.4365 (Subpart KKKK) and Env-A 806.03(a)
3	Oxides of Nitrogen (NO <sub>x</sub> ), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)	If the Emergency Generator <i>is not</i> maintained according to the manufacturer's emission-related instructions, the Facility must conduct periodic performance tests in accordance with 40 CFR 60.4244(a) through (f).	Within one year of engine startup and every 8760 hours of operation or 3 years elapsed whichever comes first.	EU02	40 cfr 60.4243 (a)(2)(ii)
4	Oxides of Nitrogen (NO <sub>x</sub> )	Compliance testing shall be planned and carried out in accordance with the following schedule: a. A pre-test protocol shall be submitted to the Division at least 30 days prior to the commencement of testing; b. The Owner or Operator and any contractor retained by the Owner or Operator to conduct the test shall meet with a Division representative at least 15 days prior to the test date to finalize the details of the testing; and c. A test report shall be submitted to the Division within 60 days after the completion of testing.	Within 60 days from startup of the device for the compressor turbine; within one year from startup of the device for the emergency generator	EU01 & EU02	Env-A 802

Table 4 - Monitoring and Testing Requirements					
Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis
5	Oxides of Nitrogen (NO <sub>x</sub> )	Conduct periodic performance tests in accordance with 40 CFR 60.4400.	Once per year, no more than 14 months from previous test	EU01	40 CFR 60.4340 (Subpart KKKK)
6	Oxides of Nitrogen (NO <sub>x</sub> )	If the NO <sub>x</sub> emission result from the performance test in Table 4 Item 4, is: a. less than or equal to 75 percent of the NO <sub>x</sub> emission limit in Table 3, Item 1, the Facility may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test); b. greater than 75 percent of the NO <sub>x</sub> emission limit for the turbine, you must resume annual performance tests.	Annually, unless result is less than or equal to 75 percent of the NO <sub>x</sub> emission limit; then every two years	EU01	40 CFR 60.4340 (Subpart KKKK)
7	Oxides of Nitrogen (NO <sub>x</sub> )	The following test methods, or Division approved alternatives, shall be used: a. Method 20, 40 CFR 60 Appendix A to determine NO <sub>x</sub> emissions in parts per million; b. Method 19, 40 CFR 60 Appendix A to determine the NO <sub>x</sub> emissions rate in lb/MMBtu; and c. Method 3 or 3A, 40 CFR 60 Appendix A and molecular weight, to determine CO <sub>2</sub> , O <sub>2</sub> , and excess air on a dry basis.	During compliance testing	EU01	Env-A 802

## VI. Recordkeeping Requirements

The Owner or Operator shall be subject to the recordkeeping requirements identified in Table 5:

Table 5 - Recordkeeping Requirements				
Item #	Requirement	Duration/Frequency	Applicable Unit	Regulatory Basis
1	<u>Record Retention and Availability</u> Keep the required records on file. These records shall be available for review by the Division upon request.	Retain for a minimum of 5 years	Facility Wide	Env-A 902



Table 5 - Recordkeeping Requirements				
Item #	Requirement	Duration/ Frequency	Applicable Unit	Regulatory Basis
2	<p><u>General Recordkeeping Requirements for Combustion Devices</u></p> <p>Maintain the following records of fuel characteristics and utilization for the fuel used in the combustion devices:</p> <ol style="list-style-type: none"> <li>Type (e.g. natural gas) and amount of fuel burned in each device, <u>or</u> type and amount of fuel burned in multiple devices and hours of operation of each device to be used to apportion fuel use between the multiple devices;</li> <li>Hours of operation of each emergency generator.</li> </ol>	Monthly	EU01 & EU02	Env-A 903.03
3	<p><u>Gaseous Fuel Recordkeeping Requirements</u></p> <p>Maintain one of the following:</p> <ol style="list-style-type: none"> <li>Sulfur content as percent sulfur by weight or in grains per 100 cubic feet of fuel;</li> <li>Documentation that the fuel source is from a utility pipeline; or</li> <li>Documentation that the fuel meets state sulfur limits.</li> </ol>	For each delivery of gaseous fuel to the Facility <u>or</u> whenever there is a change in fuel supplier but at least annually	Facility Wide	Env-A 903.03
4	<p><u>General NO<sub>x</sub> Recordkeeping Requirements</u></p> <p>If the actual annual NO<sub>x</sub> emissions from the Facility are greater than or equal to 10 tpy, then record the following information:</p> <ol style="list-style-type: none"> <li>Identification of each fuel burning device;</li> <li>Operating schedule during the high ozone season (June 1 through August 31) for each fuel burning device identified in Item 4.a., above, including: <ol style="list-style-type: none"> <li>Typical hours of operation per day;</li> <li>Typical days of operation per calendar month;</li> <li>Number of weeks of operation;</li> <li>Type and amount of each fuel burned;</li> <li>Heat input rate in MMBtu/hr;</li> <li>Actual NO<sub>x</sub> emissions for the calendar year and a typical high ozone day during that calendar year; and</li> <li>Emission factors and the origin of the emission factors used to calculate the NO<sub>x</sub> emissions.</li> </ol> </li> </ol>	Maintain Current Data	EU01 & EU02	Env-A 905.02

## VII. Reporting Requirements

The Owner or Operator shall be subject to the reporting requirements identified in Table 6 below. All emissions data submitted to the Division shall be available to the public. Claims of confidentiality for any other information required to be submitted to the Division pursuant to this permit shall be made at the time of submission in accordance with Env-A 103, *Claims of Confidentiality*.

Table 6 - Reporting Requirements				
Item #	Requirement	Frequency	Applicable Emission Unit	Regulatory Basis
1	<u>Annual Emissions Report</u> Submit an annual emissions report which shall include the following information: a. Actual calendar year emissions from each emission unit of NO <sub>x</sub> , CO, SO <sub>2</sub> , TSP, VOCs and HAPs; b. The methods used in calculating such emissions in accordance with Env-A 705.02, <i>Determination of Actual Emissions for Use in Calculating Emission-Based Fees</i> ; and c. All information recorded in accordance with Table 5, Items 2 and 3.	Annually (no later than April 15th of the following year)	EU01 & EU02	Env-A 907.01
3	<u>NO<sub>x</sub> Emission Statements Reporting Requirements</u> If the actual annual NO <sub>x</sub> emissions for the Facility are greater than or equal to 10 tpy, then include the following information with the annual emission report: a. A breakdown of NO <sub>x</sub> emissions reported pursuant to Table 6, Item 1 by month; and b. All data recorded in accordance with Table 5, Item 4.	Annually (no later than April 15th of the following year)	EU01 & EU02	Env-A 909
4	<u>Permit Deviation Reporting Requirements</u> Report permit deviations that cause excess emissions in accordance with Condition VIII.B.	Within 24 hours of discovery of excess emission	EU01 & EU02	Env-A 911.04(b)(1)
5	<u>Emission Based Fees</u> Pay emission-based fees in accordance with Condition X.	Annually (no later than April 15th of the following year)	EU01 & EU02	Env-A 700

### VIII. Permit Deviation Reporting Requirements

#### A. Env-A 101, *Definitions*:

1. A *permit deviation* is any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in either a Title V permit, state permit to operate, temporary permit or general state permit issued by the Division.
2. An *excess emission* is an air emission rate that exceeds any applicable emission limitation.

#### B. Env-A 911.04(b)(1), *Reporting Requirements*: In the event of a permit deviation that causes excess emissions, notify the Division of the permit deviation and excess emissions by telephone (603-271-1370), fax (603-271-7053) or e-mail (pdeviations@des.state.nh.us), within 24 hours of discovery of the permit deviation, unless it is a Saturday, Sunday, or state or federal legal holiday, in which event, the Division shall be notified on the next day which is not a Saturday, Sunday, or state or federal legal holiday.

### IX. Permit Amendments

A. Env-A 612.01, *Administrative Permit Amendments:*

1. An administrative permit amendment includes the following:
  - a. Corrects typographical errors;
  - b. Requires more frequent monitoring or reporting; or
  - c. Allows for a change in ownership or operational control of a source provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Division.
2. The Owner or Operator may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

B. Env-A 612.03, *Minor Permit Amendments: Temporary Permits and State Permits to Operate:*

1. The Owner or Operator shall submit to the Division a request for a minor permit amendment for any proposed change to any of the conditions contained in this permit which will not result in an increase in the amount of a specific air pollutant currently emitted by the emission units listed in Condition II and will not result in the emission of any air pollutant not emitted by the emission unit.
2. The request for a minor permit amendment shall be in the form of a letter to the Division and shall include the following:
  - a. A description of the proposed change; and
  - b. A description of any new applicable requirements that will apply if the change occurs.
3. The Owner or Operator may implement the proposed change immediately upon filing a request for the minor permit amendment.

C. Env-A 612.04, *Significant Permit Amendments: Temporary Permits and State Permits to Operate:*

1. The Owner or Operator shall submit a written request for a permit amendment to the Division at least 90 days prior to the implementation of any proposed change to the physical structure or operation of the emission units covered by this permit which increases the amount of a specific air pollutant currently emitted by such emission unit or which results in the emission of any regulated air pollutant currently not emitted by such emission unit.
2. A request for a significant permit amendment shall include the following:
  - a. A complete application form, as described in Env-A 1703 through Env-A 1708, as applicable;
  - b. A description of:
    - i. The proposed change;
    - ii. The emissions resulting from the change; and
    - iii. Any new applicable requirements that will apply if the change occurs; and
    - iv. Where air pollution dispersion modeling is required for a device pursuant to Env-A 606.02, the information required pursuant to Env-A 606.03.
3. The Owner or Operator shall not implement the proposed change until the Division issues the amended permit.

X. **Emission-Based Fee Requirements**

- A. Env-A 705.01, *Emission-based Fees:* The Owner or Operator shall pay to the Division each year an emission-based fee for emissions from the emission units listed in Condition II.

## Concord Expansion Compressor Station

- B. Env-A 705.02, *Determination of Actual Emissions for use in Calculating of Emission-based Fees*: The Owner or Operator shall determine the total actual annual emissions from the emission units listed in Condition II for each calendar year in accordance with the methods specified in Env-A 616, *Determination of Actual Emissions*. If the emissions are determined to be less than one ton, the emission-based fee shall be calculated using an emission-based multiplier of one ton.
- C. Env-A 705.03, *Calculation of Emission-based Fees*: The Owner or Operator shall calculate the annual emission-based fee for each calendar year in accordance with the procedures specified in Env-A 705.03 and the following equation:

$$FEE = E * DPT$$

where:

- FEE = The annual emission-based fee for each calendar year as specified in Env-A 705;  
E = Total actual emissions as determined pursuant to Condition X.B; and  
DPT = The dollar per ton fee the Division has specified in Env-A 705.03(e).

- D. Env-A 705.04, *Payment of Emission-based Fee*: The Owner or Operator shall submit, to the Division, payment of the emission-based fee by April 15th for emissions during the previous calendar year. For example, the fees for calendar year 2008 shall be submitted on or before April 15, 2009.



## PERMIT APPLICATION REVIEW SUMMARY

New Hampshire Department of Environmental  
Services  
Air Resources Division  
P.O. Box 95, 29 Hazen Drive  
Concord, NH 03302-0095  
Phone: 603-271-1370 Fax: 603-271-7053

Facility:	Concord Expansion Compressor Station (CECS)	Engineer:	Muriel Lajoie
Site Owner:	Tennessee Gas Pipeline Corporation (TGP)		
Parent Company:	El Paso Corporation		
Location:	Mammoth Road, Pelham, NH 03076		
AFS #:	3301191266	Application #:	08-0023
		Date:	7/22/2008
			Page 1 of 4

### APPLICATION & OTHER COMMUNICATION:

Date	Description
1/31/2008	Application received
2/29/2008	Completeness letter sent (Temporary Permit – Shield does not apply)
5/27/2008	Air dispersion modeling review completed
7/11/2008	Request from source to modify Table 4, Item 7.

### PROJECT DESCRIPTION/PERMIT HISTORY

This is a new facility. An application for a Temporary Permit for a single new, natural gas-fired, low-NOx Solar Centaur compressor turbine rated at 6,130 hp (58.4 MMBtu/hr gross heat input)<sup>1</sup> and a natural gas-fired emergency generator rated at 425 hp, was filed by Eastern Pipelines Environmental on behalf of TGP.

### FACILITY DESCRIPTION

The purpose of the facility is to maintain pressure in the pipeline, through the use of a centrifugal compressor driven by a natural gas-fired turbine. Compressor Station 270B1 is part of the Concord Expansion Project to support growth needs in NH.

### PROCESS/DEVICE DESCRIPTION

The following table details the permit required (\*) and non-permit required fuel burning devices:

Device	Mfg.	Model #	Serial #	Installation Date	Nameplate Rating	Fuel Type	Max. Fuel Flow Rate (cf/hr)
Compressor Turbine #1*	Solar	Centaur 50-6200LS	TBD	est. 2008	6,346 hp @ 40F 58.4 MMBtu/hr	natural gas	56,000 @ 40F
Emergency Generator *	TBD	TBD	TBD	est. 2008	425 hp	natural gas	4,500 @ 40F
Fuel Gas Heater	TBD	TBD	TBD	TBD	1.5 MMBtu/hr	natural gas	1,597 @ 40F
Space Heater(s)	TBD	TBD	TBD	TBD	1.5 MMBtu/hr	natural gas	1,597 @ 40F
Water Heater	TBD	TBD	TBD	TBD	1.0 MMBtu/hr	natural gas	1,065 @ 40F

### POLLUTION CONTROL EQUIPMENT

There is no add-on pollution control equipment on any of the devices.

### EMISSION CALCULATIONS

40 CFR 60.4330(a)(2) requires that the Facility “must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input.” Env-A 1605.01 requires a sulfur content of gaseous fuel <15 grains/100 scf. The following compares the two limits and determines that

<sup>1</sup> Nameplate Ratings based on high heating value (HHV) of natural gas (1042.5 Btu/scf) and maximum fuel flow rate provided in permit application 08-0023.

### PERMIT APPLICATION REVIEW SUMMARY

<b>Facility:</b>	Concord Expansion Compressor Station	<b>Engineer:</b>	Muriel Lajoie
<b>Location:</b>	Mammoth Road, Pelham, NH 03076		
<b>AFS #:</b>	3301191266	<b>Application #:</b>	08-0023
		<b>Date:</b>	7/22/2008
			Page 2 of 4

Env-A 1605.01 is more stringent and will be included as the sulfur limit in the permit.

#### Assumptions:

0.060 lb SO<sub>2</sub>/MMBtu

58.4 MMBtu/hr GHI Combustion Turbine equivalent to 56,000 scf gas/hr

1 grain = 1.43 E-4 lb

$0.060 \text{ lb SO}_2/\text{MMBtu} * 58.4 \text{ MMBtu/hr} = 3.5 \text{ lb SO}_2/\text{hr} / 56,000 \text{ scf/hr} = 6.26 \text{ E-5 lb SO}_2/\text{scf}$

$6.26 \text{ E-5 lb SO}_2/\text{scf} / 1.43 \text{ E-4 lb/grain} = 0.437 \text{ grains SO}_2/\text{scf}$  or **43.7 grains SO<sub>2</sub>/100scf**

Refer to Concord Expansion Compressor Station emissions calculations found at: Conc Exp Calculations.xls and summarized below<sup>2</sup>:

	Potential to Emit Summary (tons/year)				
	NOx	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub>
Compressor Turbine	23.52	28.64	1.6365	1.68765	15.34226
Emergency Generator	0.47	0.94	0.2338	0.01170	0.00069
Fuel Gas Heater	0.35	0.59	0.0385	0.05316	0.31477
Space Heater(s)	0.35	0.59	0.0385	0.05316	0.31477
Water Heater	0.23	0.39	0.0257	0.03545	0.20991
<b>Total Emissions</b>	<b>24.69</b>	<b>30.75</b>	<b>1.95</b>	<b>1.81</b>	<b>15.97</b>

#### STACK INFORMATION

Refer to Modeling Project Summary dated 5/27/2008.

#### MODELING

The Facility submitted an air quality impact analysis with permit application 08-0023, to assess the Project's maximum predicted ground level pollutant concentrations against applicable National Ambient Air Quality Standards (NAAQS), EPA Significant Impact Levels and Prevention of Significant Deterioration (PSD) increments. A modeling memo dated 3/7/2008 was prepared referencing Section 4 of the permit application.<sup>3</sup>

Results summarized in a TSB modeling memo dated 5/27/2008 stated "...all of the maximum predicted impacts associated with the proposed turbine are below the significant impact levels. Therefore, by definition, the maximum impacts from the Concord Expansion Project will also meet Class II increments and AAQS."

#### EMISSION TESTING

Emissions testing is being required to verify manufacturer's guarantees of emissions.

#### SITE VISITS/INSPECTIONS

None

<sup>2</sup> The facility's PTE for NOx, CO, VOC, PM10 and SO2 are less than 50 tons per year for each pollutant and less than 10 tons per year of HAPs. Therefore, the facility is a true minor source.

<sup>3</sup> However, the higher SO<sub>2</sub> emission rate from 40 CFR 60 Subpart KKKK was included in the requested modeling memo to the Technical Services Bureau.

**PERMIT APPLICATION REVIEW SUMMARY**

<b>Facility:</b>	Concord Expansion Compressor Station		<b>Engineer:</b>	Muriel Lajoie	
<b>Location:</b>	Mammoth Road, Pelham, NH 03076				
<b>AFS #:</b>	3301191266	<b>Application #:</b>	08-0023	<b>Date:</b>	7/22/2008
					Page 3 of 4

**REPORTS/FEES**

Permit and modeling review fees were received on 1/31/2008.

**CHANGES FROM PREVIOUS PERMIT**

This is a new source.

**REVIEW OF REGULATIONS****State Regulations****Env-A 600 – Permitting**

- 606.02 (a) – Applicable – Air dispersion modeling analysis is required because the facility is a new stationary source.
- 607.01(a) – Applicable – The compressor turbine burns natural gas and has a design rating of greater than 10 MMBtu/hr.
- 607.01(d)(2) – Applicable – The emergency generator burns natural gas and has a design rating of less than 10 MMBtu/hr. However, combined with the turbine, their gross heat input is >10 MMBtu/hr, requiring both devices to have a permit.
- 607.01(n) – Not Applicable – The facility is a true minor source of NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub> and VOCs.
- 607.01 (q) – Applicable – The facility is subject to NSPS 40 CFR 60, Subpart KKKK for the compressor turbine and Subpart JJJJ for the emergency generator.
- 607.01(r) – Not Applicable – The facility is not subject to NESHAP Standards because the facility emits less than 10/25 tpy of HAPs.

**Env-A 1200 – Prevention, Abatement and Control of Stationary Source Air Pollution**

- 1211.01 - Not Applicable – The facility has a Potential to Emit of less than 50 tpy of NO<sub>x</sub>.

**Env-A 1400 – Regulated Toxic Air Pollutants**

- 1402.01 – Not applicable to sources burning virgin fuel.

**Env-A 1600 – Fuel Specifications**

- 1605.01 – Applicable – The sulfur limit for natural gas is 15 grains/100 cf at standard temperature and pressure. NHDES is more stringent than NSPS (20 grains/100 cf).

**Env-A 2000 – Fuel Burning Devices**

- 2002.02 – Applicable – visible emissions from the compressor turbine and the emergency generator are limited to 20%.
- 2002.04 – Not Applicable – The compressor turbine and emergency generator are not steam generating units.
- 2002.08 – Applicable – TSP emissions from the compressor turbine are limited to 0.30 lb/MMBtu

**Federal Regulations**

- 40 CFR 60 Subpart KKKK – Applicable - New combustion turbine with a heat input rate greater than 10 MMBtu/hr constructed after February 18, 2005.
- 40 CFR 60 Subpart JJJJ – Applicable - Emission limitations for owners and operators of stationary emergency engines greater than or equal to 130 hp, manufactured after January 1, 2009. The source intends to purchase an engine manufactured after this date, therefore is subject to this NSPS.
- 40 CFR 63 Subpart YYYY – Not Applicable - The facility is not subject to this NESHAP because the potential to emit HAPs is less than the major source thresholds of 10/25 tpy.
- 40 CFR 63 Subpart ZZZZ – Applicable – The facility is subject to this NESHAP because it is an area source of HAP emissions. The facility meets the requirements of Subpart ZZZZ by complying with the NSPS under 40 CFR

### PERMIT APPLICATION REVIEW SUMMARY

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		<b>Date:</b>	7/22/2008
			Page 4 of 4

60 Subpart JJJJ.

- 40 CFR 93, Subpart B – *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* - Applicable - For certain Federal actions, a conformity determination is required for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a Federal action would equal or exceed specific levels. The pollutants requiring a review in Hillsborough and Rockingham County ozone non-attainment areas are VOCs and NOx. The summary found in Permit Application 08-0023, Appendix K shows the project to be in conformity with the respective levels.

#### PUBLIC COMMENT PERIOD (7/10/2008-8/11/2008)

In two emails dated July 11 and 22, 2008, Trinh Tran of Tennessee Gas Pipeline requested three changes as noted below:

TGP 1) "Item 7 refers to Method of Compliance for NOx and I would ask for 1) Method 9 to be removed as this method is for opacity only. NSPS Subpart A requires demonstration to an *applicable* opacity standard as specified in the applicable source category subpart, i.e., subpart KKKK. However, as Subpart KKKK does not regulate opacity for turbines, there is no opacity standard in this subpart. Also, the subject unit fire only natural gas with negligible PM emissions. Additionally, I trust that opacity monitoring requirement for the turbine (EU01) is satisfied via Item 3 of Table 3;"

DES 1) As there is no opacity requirement in 40 CFR 60, Subpart KKKK and Table 3., Item 3. requires the testing of opacity from EU01 "upon request by the Division", Table 4., Item 7.e. will be removed and the section re-lettered as 7.a. through 7.d.

TGP 2) "Application of Method 19, in lieu of Methods 2, 2C, 2F, 2G, or 2H (item 7b) to calculate exhaust flow. As stated under §60.4400(a)(1)(ii) which I have copied below from NSPS Subpart KKKK, Method 19 is an approved method to calculate the NOx emission rate in lb/MMBtu."

*§60.4400(a)(1)(ii) Measure the NOx and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NOx emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NOx emission rate in lb/MWh.*

DES 2) Though the leading statement in Table 4., Item 7. states that "Division approved alternatives" shall be used, the NSPS standard clearly indicates that calculation of the stack flow (via Method 19) in lieu of the stated measurement methods is approved. Therefore, Item 7.b. will be revised to remove listed methods and add Method 19.

TGP 3) "I would ask is the deletion of Method 4 if we are allowed to conduct Method 19. Method 4 is for the determination of water vapor in the stack gases and with Method 19, since all emissions will be on a dry basis and a dry F-factor (Fd) will be utilized, this renders Method 4 unnecessary."

DES 3) Table 4, Item 7.d. has been removed as the emissions will be calculated on a dry weight basis.

DES 4) Additional changes have been made to Table 4., Items 7a. and 7b. to clarify units of measure.

#### SUMMARY AND CONCLUSIONS

The facility is a true minor source of air pollution and will be able to comply with all regulations. A Temporary Permit will be drafted.



Facility Name: Concord Expansion Compressor Station  
 Facility Address: Mammoth Road, Pelham, NH 03076  
 Facility ID: 3300900115  
 Owner Name: Tennessee Gas Pipeline Company  
 Parent Company: El Paso Corporation

Application No. 08-0023  
 Facility Contact: Trinh Tran  
 Telephone No.: 713-420-7931

Permit No.: TP-B-0544  
 Issued: 8/15/2008  
 Expires: 2/28/2010  
 Cales Date: 03/14/08

Device	Manufacturer	Model #	Serial #	Installation Date	Nameplate Rating		Fuel Type	Max. Fuel Flow Rate @ 40" (mmcf/hr)
					hp	MMBtu/hr <sup>6</sup>		
Compressor Turbine #1	Solar	Centaur 50-6200LS	TBD	TBD	6346	58.4	Natural Gas (LNG)	0.056000
Emergency Generator	TBD	TBD	TBD	TBD	425	4.68	LNG	0.004489
Fuel Gas Heater	TBD	TBD	TBD	TBD	N/A	1.66	LNG	0.0016
Space Heater(s) <sup>5</sup>	TBD	TBD	TBD	TBD	N/A	1.66	LNG	0.0016
Water Heater	TBD	TBD	TBD	TBD	N/A	1.11	LNG	0.0011

			Maximum Load		
Device	Pollutants	Emissions Factors (lb/MMBtu, HHV) <sup>1,2</sup>	Hourly Emissions @ 40" (lb/hr)	Potential to Emit (tpy) <sup>7</sup>	
Compressor Turbine	NOx	0.092	5.37	23.52	
	CO	0.112	6.54	28.64	
	UHC <sup>3</sup> , Emissions as VOC	0.0064	0.37	1.64	
	PM <sub>10</sub>	0.0066	0.39	1.69	
	SO <sub>2</sub>	0.06	3.50	15.34	
	HAP	0.00305	0.18	0.78	
			Maximum Load		
Device	Pollutants	Emissions Factor <sup>4</sup>	Units	Hourly Emissions @ 40" (lb/hr)	Potential to Emit (tpy) <sup>7</sup>
Emergency Generator	NOx	2.00	g/bhp-hr	1.87	0.47
	CO	4.00	g/bhp-hr	3.74	0.94
	VOC	1.00	g/bhp-hr	0.94	0.23
	PM <sub>10</sub>	0.010	lb/MMBtu	0.047	0.012
	SO <sub>2</sub>	0.000588	lb/MMBtu	0.0028	0.00069

Potential to Emit Summary (tons/year)					
	NOx	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub> <sup>8</sup>
Compressor Turbine	23.52	28.64	1.6365	1.68765	15.34226
Emergency Generator	0.47	0.94	0.2338	0.01170	0.00069
Fuel Gas Heater <sup>2</sup>	0.35	0.59	0.0385	0.05316	0.31477
Space Heater(s) <sup>5</sup>	0.35	0.59	0.0385	0.05316	0.31477
Water Heater <sup>5</sup>	0.23	0.39	0.0257	0.03545	0.20991
<b>Total Emissions</b>	<b>24.69</b>	<b>30.75</b>	<b>1.95</b>	<b>1.81</b>	<b>15.97</b>

<sup>1</sup> Compressor Turbine NOx, CO and UHC Vendor Guaranteed emissions from Permit Application 08-0023, Section 2.1.1 *Typical Operations* are the basis for these emissions factors. They are the same emissions factors required by 40 CFR 60, Subpart KKKK. Subpart KKKK also requires an SO<sub>2</sub> emission rate of <0.06 lb/MMBtu. The turbine will burn exclusively natural gas, which will ensure compliance with Subpart KKKK. PM<sub>10</sub> and HAP emissions factors are from AP-42, Section 3.1 *Stationary Gas Turbines*, Table 3.1-2a.

<sup>2</sup> Example Compressor Turbine emission factor calculation for CO:

$$EF_x = (Cd \times F_d) \times [20.9] / [20.9 - \%O_2]$$

$$CO \text{ lb/MMBtu} = (50 \text{ ppm(vol)}) \times 28 \text{ g/mw} / 385.1 \text{ E6} \times 8710 \text{ dscf/MMBtu} \times [20.9 / 20.9 - 15]$$

$$CO = 0.112 \text{ lb/MMBtu}$$

<sup>3</sup> Compressor turbine VOC emissions are assumed to be 20% of Unburned Hydrocarbon (UHC) emissions as specified in Solar Turbines Product Information Letter (PIL) 168.

<sup>4</sup> Emergency Generator NOx, CO and VOC exhaust emission limits are equal to New Source Performance Standards (NSPS) for engines greater than or equal to 130 hp, manufactured after January 1, 2009 as noted in 40 CFR 60, Subpart JJJJ, Table 1.

<sup>5</sup> Emissions factors for the Fuel Gas Heater, Space Heater(s) and Water Heater units taken from AP-42, Section 1.4 *Natural Gas Combustion*, Tables 1.4-1 and 1.4-2. Units are < 10 MMBtu and do not require permits per Env-A 607.01(a), but emissions are included for completeness.

<sup>6</sup> The potential fuel heat input for the Combustion Turbine is based on the heating value (HHV) of natural gas: 1042.5 Btu/scf from Permit Application 08-0023, Table B.7.

<sup>7</sup> Compressor turbine based on 8760 hours per year. Emergency Generator based on 500 hours per year.

<sup>8</sup> Maximum sulfur content for Fuel Gas Heater, Space Heater(s) and Water Heater per Env-A 1605.01(a) = 15 grains/100 cf

\* The total gross heat input of the space heaters will not exceed 1.66 MMBtu/hr based on the HHV of natural gas.

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**Facility Address:** Mammoth Road, Pelham, NH 03076  
**Facility ID:** 3300900115  
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**Parent Company:** El Paso Corporation

**Application No.** 08-0023  
**Facility Contact:** Trinh Tran  
**Telephone No.:** 713-420-7931

**Permit No.:** TP-B-0544  
**Issued:** 8/15/2008  
**Expires:** 2/28/2010  
**Calcs Date:** 03/04/08

Device	Manufacturer	Model #	Serial #	Installation Date	Nameplate Rating		Fuel Type	Max. Fuel Flow Rate (mmcf/hr)
					hp	MMBtu/hr <sup>5</sup>		
Compressor Turbine #1	Solar	Centaur 50-6200LS	TBD	TBD	6346	52.6	Natural Gas (LNG)	0.056
Emergency Generator	TBD	TBD	TBD	TBD	425	4.7	LNG	0.0050
Fuel Gas Heater	TBD	TBD	TBD	TBD	N/A	1.5	LNG	0.0016
Space Heater(s)	TBD	TBD	TBD	TBD	N/A	1.5	LNG	0.0016
Water Heater	TBD	TBD	TBD	TBD	N/A	1.0	LNG	0.0011

Device	Pollutants	Emissions Factors (lb/MMBtu, HHV) <sup>1,2,3</sup>	Maximum Load	
			Hourly Emissions @ 40°F (lb/hr)	Permitted Emissions (tpy) <sup>6</sup>
Compressor Turbine	NOx	0.092	4.84	21.19
	CO	0.112	5.89	25.80
	UHC <sup>4</sup> Emissions as VOC	0.0064	0.34	1.47
	PM <sub>10</sub>	0.0066	0.35	1.52
	SO <sub>2</sub>	0.0034	0.18	0.78
Emergency Generator	NOx	0.401	1.88	0.47
	CO	0.802	3.75	0.94
	VOC	0.200	0.94	0.23
	PM <sub>10</sub>	0.010	0.047	0.012
	SO <sub>2</sub>	0.000588	0.0028	0.00069

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	Summary (tons/year)				
	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub> <sup>R</sup>
Compressor Turbine	21.19	25.80	1.4743	1.52042	0.78325
Emergency Generator	0.47	0.94	0.2340	0.01170	0.00069
Fuel Gas Heater <sup>7</sup>	0.35	0.59	0.0385	0.05316	0.31477
Space Heater(s) <sup>7</sup>	0.35	0.59	0.0385	0.05316	0.31477
Water Heater <sup>7</sup>	0.23	0.39	0.0257	0.03545	0.20991
<b>Total Emissions</b>	<b>22.36</b>	<b>27.91</b>	<b>1.79</b>	<b>1.64</b>	<b>1.41</b>

<sup>1</sup> Compressor Turbine NO<sub>x</sub>, CO and UHC Vendor Guaranteed emissions from Permit Application 08-0023, Section 2.1.1 *Typical Operations* are the basis for these emissions factors. PM<sub>10</sub>, SO<sub>2</sub> and HAP emissions factors from AP-42, Table 3.1-2a. Emission Factors for Criterial Pollutants and Greenhouse Gases from Stationary Gas Turbines

<sup>2</sup> Example Compressor Turbine emission factor calculation for CO:

$$EF_x = (Cd \times Fd) \times [20.9] / [20.9 - \%O_2]$$

$$CO \text{ lb/MMBtu} = (50 \text{ ppm(vol)} \times 28 \text{ gmw} / 385.1 \text{E6}) \times 8710 \text{ dscf/MMBtu} \times [20.9 / 20.9 - 15]$$

$$CO = 0.112 \text{ lb/MMBtu}$$

NO<sub>x</sub>, CO and UHC emissions factors for combustion turbine from Vendor Guarantee. PM<sub>10</sub>, SO<sub>2</sub> and HAP emissions factors from AP-42, Table 3.1-2a. Emission Factors for Criterial Pollutants and Greenhouse Gases from Stationary Gas Turbines

<sup>3</sup> Emergency Generator NO<sub>x</sub>, CO and VOC exhaust emission limits are equal to New Source Performance Standards (NSPS) for engines greater than or equal to 130 hp, manufactured after January 1, 2009.

<sup>4</sup> VOC emissions are assumed to be 20% of Unburned Hydrocarbon (UHC) emissions

<sup>5</sup> The potential fuel heat input for the Combustion Turbine is based on the heating value (LHV) of natural gas provided by the Facility: 939.2 Btu/scf. Emergency Generator was calculated using a conservative estimate of 11,000 Btu/hp-hr for fuel efficiency from Permit Application 08-0023, Table B.7.

<sup>6</sup> Compressor Turbine based on 8760 hours per year. Emergency Generator based on 500 hours per year.

<sup>7</sup> Fuel Gas Heater, Space Heater and Water Heater emissions factors for these units taken from AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2. Units are < 10 MMBtu and do not require permits per Env-A 607.01(a), but emissions are included for completeness.

<sup>8</sup> Sulfur content per Env-A 1605.01(a) = 15 grains/100 cf

CONDITIONS PERTAINING TO OPERATIONAL NOISE

## APPENDIX 2

## CONDITIONS PERTAINING TO OPERATIONAL NOISE

- 1) The Applicant shall design, construct and maintain the compressor station in substantial conformity with those parameters contained in Section 4, "Station Sound Level Treatment Summary" in the Report of HFP Acoustical Consultants, Inc., dated November 6, 2008. See, Applicant Exhibit H.
- 2) The Applicant shall construct, operate and maintain the Station so that it remains in full compliance with applicable FERC sound level regulations. See, Applicant Exhibit I.
- 3) TGP shall file copies of all noise surveys, reports, and studies filed with FERC with this Committee and inform the Committee of any action taken by FERC in response to said filings.
- 4) The Committee retains its authority to monitor the proposed facility, to investigate complaints and to enforce the terms and conditions of the Certificate of Site and Facility, including the authority to require further sound level testing or additional remedial measures.